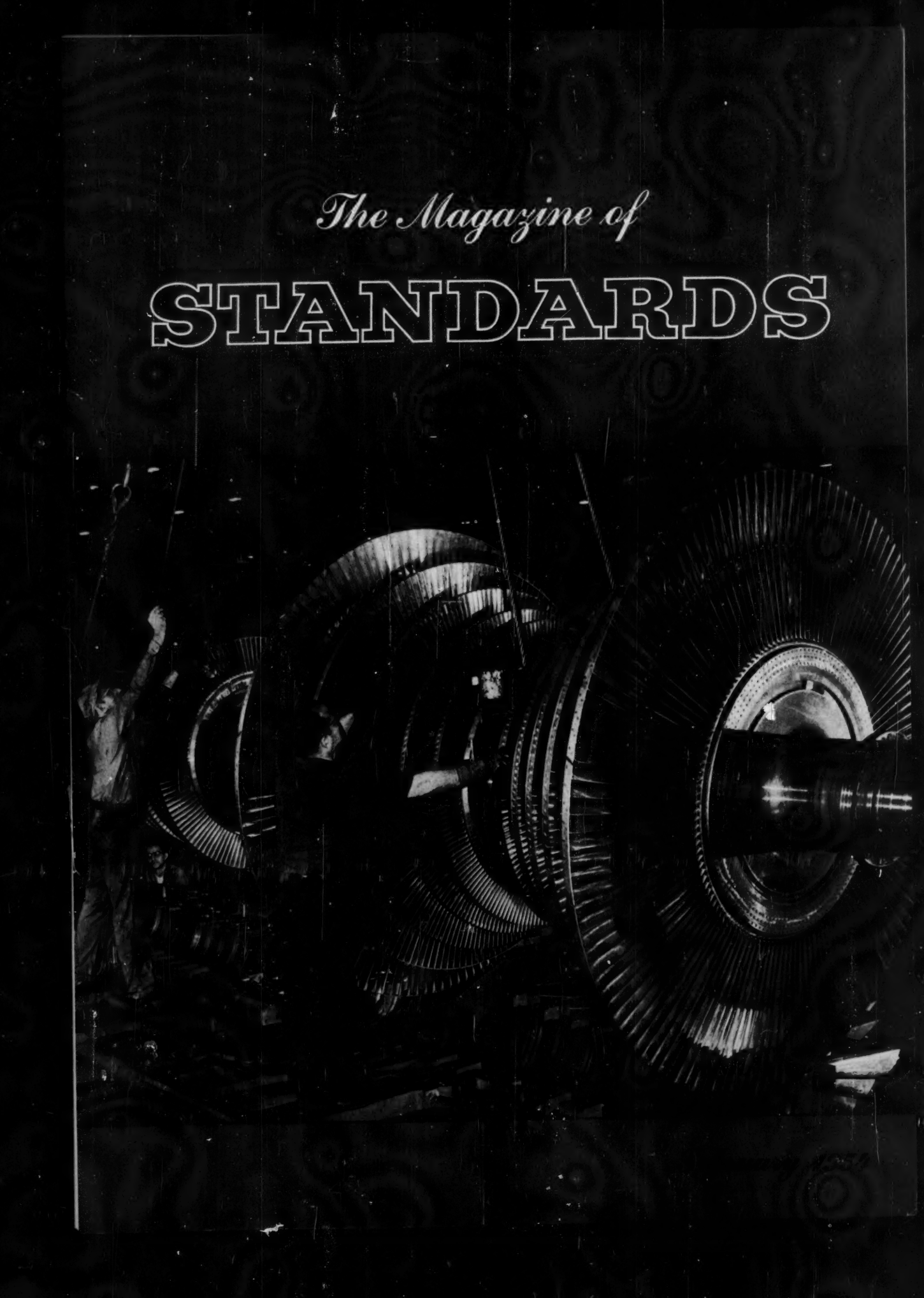
The Magazine of

STANDARDS



The Magazine of

STANDARDS

Formerly Standardization

February 1954 Volume 25, No. 2

Published monthly by American Standards Association, Incorporated
70 East 45th Street, New York 17, N.Y.

OFFICERS

Roger E. Gay, *President*
Edward T. Gushee, *Vice-President*
Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director and Secretary*
Cyril Ainsworth, *Technical Director and Assistant Secretary*

Ruth E. Mason, *Editor*
Jessie F. Egan, *Production Editor*

In This Issue

Companies —

Factors in Organizing a Company's Standards Department. By H. W. Robb 48

Use of Standards —

Color for Safety 52
A New Look at Standards. By Bryce P. Holcombe 54
Recent Rulings on Unusual Accidents 61

Government —

Government Standards, No. 5 — Standardization in the Commonwealth of Virginia. By Samuel P. Kaidanovsky 57
Government Policy on Standards 65

Personalities —

Paul Gough Agnew 44
This Month's Standards Personality — Virgil M. Graham 43
Certificates of Service 56

The International Organization for Standardization —

Transfusion Equipment 71

From Other Countries —

Standards Received 64
Australia Comments 71
Advice on Standards 71

Societies and Associations —

The Standards Engineers Society 65

Standards Outlook. By Leo Moore 71

What Is Your Question? 63

American Standards Activities —

Status of American Standards 66
What's New on American Standard Projects 69

MARGINAL NOTES

In This Issue —

The standardization procedures of the General Electric Company may not fit every company's needs; however, they may offer ideas that you will find useful in your organization (page 48).

Questions received by ASA indicate that color in industry is a subject of lively interest. The new safety color code for protection of industrial workers is now available (page 52).

Perhaps you may have some ideas on the standardization problems seen by a labor leader in the building field (page 54).

Decisions on unusual accidents are again published for your information (page 61). The Committee of Judges has been hard at work during the past year but has been unable to release the cases for publication until this month.

The sixth in the series of articles on Government Standards again discusses standardization by a state government — this time the Commonwealth of Virginia (page 57).

Have you noticed the new series just being started — the personal discussion column by Leo Moore (page 71)?

G-E's Robb —

H. W. Robb, author of the article explaining the General Electric Company's activities in standardization (page 48), has been in the employ of the company since 1923 when he was graduated from Cornell University. Since 1930 he has been working on development of Company standards. He was active in formation of the ASA Company Member Forum which led to the present Company Member Conference. He was chairman of the Conference in 1947 and 1948.

ASA
Reg. U. S. Pat. Off.

Single copy 50¢. $7.00 per year (foreign $8.00). Schools and libraries $5.00 (foreign $6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the P.O., New York, N. Y., under the Act of March 3, 1879.

Opinions expressed by authors in THE MAGAZINE OF STANDARDS *are not necessarily those of the American Standards Association.*

Mr Robb has represented the National Electrical Manufacturers Association on numerous ASA sectional committees. He is chairman of ASA Sectional Committee Z55 on Colors for Industrial Apparatus and Equipment and of B18 on Bolts, Nuts, Rivets, Screws, and Similar Fasteners.

He has had an active part in the work to unify British-Canadian-American standards, having served as chairman of a Conference in New York in 1950. In 1951 he went to London as chairman of the USA delegation to discuss unification of bolt, nut, and screw standards, and in 1952 and 1953 he was chairman of the ABC Conferences on Limits and Fits.

Mr Robb spent nine months in Washington, in 1951, serving on the NPA Production Controls Staff as Director of Engineering Materials and Methods.

Last year Mr Robb was chairman of the American Society of Mechanical Engineers' standardization committee.

Action on Standards —

You can keep up to date concerning progress on American Standards by consulting page 66. Here is this month's report on status of standards submitted for approval by ASA. You can find the standards in which you are interested listed under their subject heading. Although, inevitably, many of these standards will have moved forward a step in the procedure by the time you receive your copy of each issue, the list will give a clue to those standards nearing completion.

The Front Cover —

This 26-ton turbine rotor is part of a 115,000 kilowatt turbine generator built by General Electric Company for the Contra Costa steam plant of the Pacific Gas and Electric Company. In this picture the rotor is being lowered into position during assembly of the unit for test at the Turbine Factory of General Electric, Schenectady. The unit for which this turbine rotor was made is of the tandem-compound double-flow reheat type developed since the end of World War II.

This picture is used through the courtesy of the General Electric Company.

This Month's Standards Personality

Virgil M. Graham

An impressive list of "firsts" during his long career in standardization mark Virgil Graham as an outstanding standards "personality." His career started in the early days of radio and of organized standardization and has been closely allied with both. In 1923, having attended the University of Rochester, he started his bread-and-butter work with the Stromberg-Carlson Telephone Manufacturing Company. He is now Director of Technical Relations of Sylvania Electric Products Inc, with functional responsibility for the company's standardization in the engineering field. He is also responsible for his company's participation in the standardization activities of industry groups and professional societies.

Mr Graham started his standardization career in 1925 in the radio acticity of the Associated Manufacturers of Electrical Supplies, which with the Electric Power Club later became the National Electrical Manufacturers Association. He was active at the same time in the standardization work of the Institute of Radio Engineers.

In 1927 and 1928 he helped edit the NEMA Handbook of Radio Standards, a type of responsibility he has continued as editor of standards and engineering information of the Radio Manufacturers Association (now the Radio-Electronic-Television Manufacturers Association). In 1931, he became chairman of the Standards Section of the RMA Engineering Committee (forerunner of the present RETMA Engineering Department). He is now Associate Director of the RETMA Engineering Department.

Among his impressive list of "firsts" is initiation of the first standardization work on automobile radio (for several years he served as chairman of the RMA-SAE Committee on this subject). Also, he was largely responsible for the development and adoption of a standardization electron tube designation system and establishment of the central registration system for tube types.

Among his other "firsts" he can list:

- The idea of the RMA Data Bureau (now the RETMA Engineering Office.)
- Introduction of the standardization system still used in RETMA (from 1934 to 1948 he served as chairman of its General Standards Committee).
- Helping in formation of the Joint Coordinatation Committee of EEI, NEMA, and RMA (for several years he served as co-chairman). This activity resulted in formation of Sectional Committee on Radio-Electrical Coordination, C63.
- Origin and chairmanship of the Radio Fall Meeting for radio and television receiver and tube engineers. The twenty-fifth meeting was held in Toronto last fall.

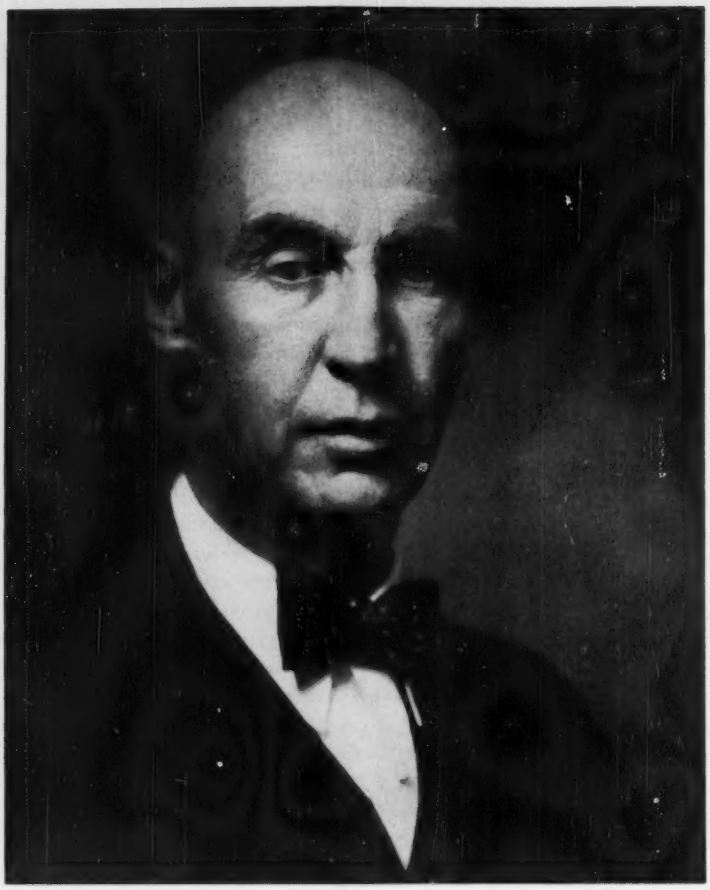
He is chairman of the Joint Electron Tube Engineering Council (JETEC) of RETMA and NEMA.

Mr Graham served as chairman of ASA Sectional Committee C16 on Radio from 1946 to 1953, and as secretary of ASA Sectional Committee C60 on Electron Tubes since 1949. He helped establish Sectional Committee C83 on Components for Electronic Equipment and is serving as its secretary. He is chairman of the Communications and Electronics Division of ASA's Electrical Standards Board; vice-president of the U.S. National Committee of the International Electrotechnical Commission; and technical advisor for IECTC 39 on Electronic Tubes and Valves.

Mr. Graham is a Fellow of the Institute of Radio Engineers, the Institution of Radio Engineers (Australia), and the Radio Club of America. He is also a member of the Société des Radioelectriciens, the Acoustical Society of America, and the Standards Engineers Society. He reports that his main sport is standardization.

Paul Gough Agnew

1881-1954



Fabian Bachrach

Paul Gough Agnew was born July 3, 1881, in the farm community of Hillsdale County, Michigan. He died unexpectedly, in his sleep, as a result of heart failure, at his home in New York City, January 9, 1954. In the intervening years he had built up a successful voluntary standards program in the United States, had been instrumental in organizing standardization internationally, and was known around the world for his writings and leadership in the philosophy he had helped develop.

As a boy, Paul Agnew's schooling was somewhat erratic due to ill health. However, his brilliant mind made him an outstanding scholar. At the age of eight, his reward for reading the Bible through from beginning to end was the then substantial payment of $1.00.

Despite irregular school attendance he skipped a number of grades and graduated from high school at 16. He entered Hillsdale College at 17 and finished his undergraduate schooling in three years, in 1901. He immediately entered the University of Michigan, receiving his Master's degree in 1902. For three years (from 1902-1905) he was an instructor of physics in the high schools of Monroe and Pontiac, Michigan. In 1906 he joined the staff of the National Bureau of Standards (then only five years old) as assistant physicist. While working at the Bureau he spent his off-work time at Johns Hopkins University, where he received the degree of Doctor of Philosophy in 1911. His dissertation for his doctorate, "A Study of the Current Transformer with Particular Reference to Iron Loss," was published as reprint bulletin No. 3 by the National Bureau of Standards.

Dr Agnew's work at the Bureau was in the Electrical Instruments Section where he developed methods and apparatus for alternating-current measurements.

Some of his papers on instrument transformers were milestones in the literature on that subject.

During the First World War, the problem of standards on a nationwide scale came prominently to the attention of scientists and industrialists alike. The National Bureau of Standards was called upon to deal with a great variety of military problems and

thus became aware of the need for standards. Dr Agnew, now a full physicist, became a technical assistant to Dr E. B. Rosa, the Bureau's Chief Physicist. In addition to development of specific military equipment, his administrative duties touched upon industrial problems of supply as dealt with by the War Industries Board. Dr Agnew became impressed with the importance of industrial standardization.

The new American Engineering Standards Committee, organized to coordinate the standards of the different engineering societies, had just started functioning when the Bureau was called on to help work out a program for the the development of safety standards. Dr Agnew was present as an observer for the Department of Commerce during the discussions that led to widening the scope of work of the Committee and broadening its membership to permit the handling of safety standards. In 1919 when a permanent secretary was selected to administer the infant Standards Committee, Paul Agnew was chosen. For 29 years he directed the staff work for the organization, developed and upheld its philosophy, and struggled over the principles on which its procedures have been built.

Dr Agnew had strong convictions about the importance of the work his organization was doing. He saw in it the essence of the democratic way of life. To him the procedure which makes it possible for all groups concerned to have a voice in the development of the standards under which they operate represented democracy in action. His firm faith in the "rightness" of the principles on which he was operating made him stubborn in his defense of them. No compromise was possible, he believed, if the voluntary method of developing standards for the benefit of industry and the consumer were to be preserved.

Dr Agnew loved the standardization movement and the organization for which he worked. He also loved a good fight on its behalf.

In 1938, on the twentieth anniversary of the organization of AESC, he said, "In looking back over these twenty years, it seems to me that one of the outstanding accomplishments of the American Standards Association has been the solution of the many controversies encountered in the work — controversies which have been sometimes technical, sometimes jurisdictional." His faith in the work he was doing was summed up in the statement, "I say 'solution' advisedly because a real solution, based upon an understanding of the basic facts, rather than a mere compromise, has generally been found. In this, the genius of the organization, in so far as it may have genius, principally lies."

Dr Agnew carried forward his principles through many of these controversies. Always he held strongly to his faith that given an opportunity for discussion, with time, differences of opinion, however violent, would resolve themselves, and a solution be reached. Sometimes his faith in the healing effects of time brought criticism on the basis that his organization was procrastinating; sometimes his strong adherence to his idea of the right methods to follow brought criticism on the basis that he was arbitrary and attempting to strengthen the organization he headed at the expense of its member groups.

Never very strong physically, he did not spare himself when standardization problems were to be solved. During his entire career as administrative head of the Association, he struggled with a staff too small for the developing program he envisioned and a budget never big enough to provide all the service he believed should be available. Under his administration, the staff of the Association grew from three to 85 persons, and its membership from five engineering societies to a federation of some 100 national trade associations, technical societies, and consumer groups.

When he first joined the organization in 1919, its work was just starting to expand. This expansion, under Dr Agnew's administration, encompassed, in addition to the safety field, standards for building, highway traffic, consumer goods, and many other classifications not originally envisioned for standardization.

The work also expanded to include international cooperation. The American Engineering Standards Committee acted as host in 1926 to the secretaries of the national standards bodies of other countries. As a result of this meeting, the International Federation of the National Standardizing Associations was organized. Again, in 1945, at the end of World War II, the ASA acted as host to national standards bodies of the United Nations countries to plan revitalization of the international work. Once again Dr Agnew took a leading part and contributed much to setting up the present International Organization for Standardization.

During the war he had done his best to improve the standards used by the Government and to bring about a smoother relationship between the military services and the industries from which they were purchasing equipment. He spent a large part of his time in Washington helping to iron out problems between Government and industry. He worked closely with Howard Coonley, in charge of the War Production Board's work on conservation and standards. He was instrumental in putting into effect an accelerated procedure for development of American War Standards through the cooperation of military and industry technical leaders. One of the series of standards developed through this procedure presented an entirely new science and is now used throughout the world. This is the statistical method of quality control first codified for industrial use in three American War Standards.

For many years Dr Agnew thought and worked and talked about one of his pet ideas. This was the need for standards for consumer goods. In 1940, he wrote: "Individuals feel that they should have the same opportunities as large industries and government agencies to judge the relation between price and quality or performance, in order to conserve their incomes by being able to select those things which best suit their needs at prices they can afford to pay. With the bewildering variety and quality of highly fabricated and packaged goods, the individual buyer feels helpless." His efforts on behalf of the consumer were recognized by the American Home Economics Association when he

• Secretaries of national standards bodies met in New York, 1926, to arrange for international association — (left to right) S. E. Oesterberg, Sweden; J. Gaillard, USA; V. List, Czechoslovakia; E. Roth, France; C. E. Skinner, USA; A. Kruse, Sweden; P. Drzewiecki, Poland; C. Rodger, Great Britain; A. Roginski, Poland; E. Uytborck, Belgium; B. Rosenbaum, Czechoslovakia; J. A. Zischievsky, Russia; Sir Richard Glazebrook, Great Britain; M. Chatelain, Russia; W. H. Tromp, Holland; Sir Archibald Denny, Great Britain; C. LeMaistre, Great Britain; S. Konishi, Japan; A. F. Enstrom, Sweden; M. Lapiroff-Scoblo, Russia; C. Hoenig, Switzerland; M. Y. Inomata, Japan; O. Kienzle, Germany; A. Huber-Ruf, Switzerland; P. G. Agnew, USA; L. B. Atkinson, Great Britain; A. Maier, Germany; P. Girault, France; P. Bretschneider, Austria; F. J. Schlink, USA; G. J. Darrieus, France; K. Heiberg, Norway.

• New York, 1945 (left to right) H. J. Wollner, United Nations Standards Coordinating Committee; P. G. Agnew, USA; J. Morel, Belgium; Colonel H. Wang, China; C. leMaistre, UNSCC, London.

• ASA receives Army Ordnance Distinguished Service Award, 1944 (left to right) H. S. Osborne (then chairman, ASA Standards Council); P. G. Agnew; Brigadier General Stewart E. Reimel; Henry B. Bryans (then ASA president).

• 1951 Recipients of Standards Awards (left to right) Dr P. G. Agnew (Standards Medal); the Honorable Herbert Hoover (Howard Coonley Medal); Thomas D. Jolly (retiring ASA president); Roger E. Gay (elected 1952 president).

• Mrs Carol Willis Moffett, American Home Economics Association's nominee on ASA Board of Directors, with Dr Agnew, during 1946 annual meeting. Interest in Consumer Standards brought AHEA in as ASA member.

was made an honorary member of the Association. The work he put in is now reflected in the recent request by the National Retail Dry Goods Association for performance standards for end-uses of all textile materials.

Dr Agnew's writing was clear and forceful, a reflection of his way of thinking. In 1940 he was selected to write the section on standardization for the Encyclopedia Britannica's new edition. In that article he summarized his view of standards. He said: "In the flow of products from farm, forest, mine, and sea, through processing and fabricating plants, and through wholesale and retail markets to the ultimate consumer, most difficulties are met at transition points — points at which the product passes from department to department within a company, or is sold by one company to another or to an individual. The main function of standards is to facilitate the flow of products through these transition points. Standards are thus both facilitators and integrators. In smoothing out points of difficulty, or 'bottlenecks,' they provide the evolutionary adjustments which are necessary for industry to be able to keep pace with technical advances. They do this in the individual plant, in particular industries, and in industry at large. They are all the more effective as integrators in that they proceed by simple, evolutionary steps, albeit inconspicuously."

He disposed of criticisms of standards as follows:

"Most of the criticisms that have been directed against standardization have been based upon a misconception of the nature of the process. These are to the effect that our minds are regimented by the fact that industry is consciously adopting standards; that the world is being reduced to dull mediocrity by standardization; and that it is one of the main 'evils' of a civilization dependent upon the machine . . . The misconception underlying these views is the idea that standardization means to stand still. To an industrialist a sound standard represents the best way of doing a thing — at the moment. If tomorrow he finds a better way, he will codify it in a new standard."

At the end of 1947, at the age of 67, Dr Agnew retired from active administration of the American Standards Association. He spent the next four-and-one-half years as Consultant to the Association and retired from all activities with the ASA at the end of June, 1952.

He was chosen as the first recipient of the Standards Medal presented "in recognition of service in the development of voluntary standards." The citation summed up his career as follows: "Author, scholar, scientist, outstanding authority on standards in the United States, through a long and distinguished career, his name is written large, imperishably, and with honor in the world of standards."

Any review of Dr Agnew's service to the cause of standardization and to ASA would not be complete without reference to the devoted assistance he received from his wife. Mrs Agnew helped her husband not only by typing his notes and drafts of articles and speeches written at home but also through constant care of his physical well being she made it possible for him rarely to miss a day at the office and to husband strength for his indefatigable effort.

His final retirement at the age of 71 did not mean inactivity. His bouts with arthritis and his many years of semi-health which kept him constantly on gard against active illness gave him a high respect for the medical profession and an interest in medical problems.

Just prior to his death he had completed a survey on behalf of the Joint Committee for the Study of Surgical Materials organized by the American Academy of Orthopedic Surgeons, the American College of Surgeons and the American Medical Association. The survey was to determine the feasibility of creating an organization which through testing and research would provide surgeons with more knowledge than they now have of the materials they use and implant in the human body. His final report to the committee presented a complete form of organization, method of financing, and procedures for carrying on the work of the proposed body. As he outlined the objects of the organization it would serve

"To test or to cause to be tested, surgical materials and devices and to issue certificates giving specified data concerning the mechanical and biological properties of articles tested.

"To conduct and encourage research and to disseminate knowledge in the broad field of surgical engineering.

"To encourage such standardization of sizes and types of devices as may be in the best interests of the surgical patient.

"To assist manufacturers in their efforts to produce better materials at decreased cost."

Dr Agnew's report was approved by the joint committee and efforts are now being made to bring the organization into existence.

Perhaps the tribute he appreciated most was the one given him by the staff of the American Standards Association at the time he retired from active administration of ASA. It may well be repeated now:

"When the time for change arrives, as it does in all things, the differences it brings about in human relationships are the most painful part of the experience. A few of us have worked under you and with the American Standards Association for more than 20 years; some of us came 17 years ago when the Association was reorganized; some of us have been with the ASA for only one or two years. All of us can assure you that we have taken pride in working for an organization which, under your direction, we were confident was one of high integrity and democratic principles. Many of us have had heated arguments among ourselves — and with you — as to policies to be followed and methods of carrying them out. This privilege of argument on behalf of an idea has been one that has been deeply appreciated by all of us who have worked closely with you. We believe it is a high tribute to you that our work here has given us a deep satisfaction and that we have developed a sincere loyalty and affection for an organization in which we believe."

Factors in Organizing A Company's Standards Department

by H. W. Robb

Standards Services Department, General Electric Company

This paper was presented at the meeting of the ASA Company Member Conference held during the Fourth National Standardization Conference, at The Waldorf-Astoria, New York, October 20, 1953.

Many definitions of the terms "standardization" and "standards" are available, but it seems appropriate in the present instance to consider standardization as the organized solution of common problems and to consider standards as the records of such solutions to avoid waste of creative effort in the repetitive consideration of the same problems.

In view of such definitions, a standards department might serve the following purposes:

(1) Promote standardization by calling attention to the need for such effort, the advantages to be gained, and procedures by which standardization can be accomplished.
(2) Assemble available information and prepare drafts for the consideration of those who have a specialized knowledge and interest in the subject, or otherwise assist committees or task forces that might be established for such purposes.
(3) Resolve, or assist in resolving differences of opinion.
(4) Issue and distribute company standards.
(5) Call attention to the availability of standards, assist in their proper understanding and application, and help to detect the need for modification to correct defects or to meet new or changed conditions.

One factor in establishing a standards department, therefore, is its purpose and scope. A second factor is the relation of standardization and a standards department to other company functions. Fundamentally, responsibility for standardization rests with all who make decisions that affect the kind, cost, and quality of a company's products or services. For that reason, standardization is an integral part of each function. If each product planner, designer, purchaser, processor, inspector, etc, had the necessary knowledge and wisdom to make the best possible decisions, and if concerted action by all were automatic, the need for organized standardization within a company would be minimized. Under conditions of this kind, company standardization effort would be simply the cumulative effect of good planning jobs, good designing jobs, good purchasing jobs, etc. Lack of such ideal performance is the justification for organized company standardization. This leads us to three conclusions in respect to this fundamental concept of standardization:

(1) Standardization is done under various names.
(2) Some standardization is of sufficiently limited scope to fall entirely within the normal functions of individual parts of a company organization.
(3) Organized company standardization and hence the activities of a standards department concern the many cases where a consensus is desirable to reflect the knowledge, requirements, and interests of different parts of the organization.

Understanding of these relations can help to integrate a standards department in a company organization and avoid friction that otherwise might result.

A third and probably most important factor involved in organizing a standards department is the attitude and expressed desire of top management in respect to the importance of standardization and the need for an organized company activity. If the president or general manager is not aware of the advantages of standardization and is not particularly interested in the activity, you can hardly expect lower levels of management and subordinate employees to be sympathetic or cooperative. Some support would undoubtedly exist, but it would depend upon the assigned authority or influence of enlightened individuals rather than upon company policy and direction. In such an atmosphere a standards department too often must devote excessive energy to justifying its existence. At best, an unusual amount of patience and persistence is needed in the slow and undramatic process of standardization and rarely is there any appreciable satisfaction of accomplishment or recognition in handling individual projects. An unsympathetic atmosphere, therefore, only adds to the demands on characteristics that are difficult to find in sufficient quantity

A conference on standards — H. W. Robb (second from left), General Electric manager of company standards, confers with his parts standardization staff.

for standards department work and it tends to make such positions unattractive.

It might be observed in this connection that standardization has been termed a tool of management. Unfortunately this is only a phrase. The principal functions of management are to plan, organize, integrate, and measure performance. Plans should include all avenues for lowering cost and improving quality of products and services, and hence should embrace company standardization since they are its principal objectives. The extent to which standardization can bring together the best thinking for the solution of a company problem and prevent its recurrence, the less energy is required by management in putting out fires by executive consideration and decision. After assigning responsibilities and duties, it is difficult to see how accomplishment can be measured without standards for comparison. The word "standards" is such a broad term that I might hasten to remove any inference that a standards department should necessarily establish administrative "standards," but it should be apparent that there are areas in engineering, manufacturing, and business methods where the conventional set of company standards are or could be tools for this purpose.

A fourth factor involved in organizing a standards department is its place in the organization structure of the company. When organized standardization exists, it is usually found in the engineering department, since engineers have traditionally shown the most interest in standardization. In other instances, company committees have been established. Very often, however, definite responsibility and accountability for such work have not been established. Since so many decisions of any component of an organization, such as designing, planning, purchasing, manufacturing, etc, affect or could be improved by advice from other components, and since standardization is a means for developing a consensus, standardization integrates phases of certain company functions to no small degree. Operating on a broad scope, therefore, it would seem that a standards department, when it comes of age, should be recognized as a separate function on an equal status. While organizational position is a great help, a standards department must actually develop its prestige without reference to position or authority to the point where its advice and assistance are solicited and where its recommendations are accepted as matters of good judgment and good business.

G. H. Harnden (right), supervisor of materials and processes in the General Electric Company's standards department, discusses a standard 1 ½-inch drill with R. H. Carter of the department. Some things G-E standards cover are on table.

The place of a standards department in a company organization is also affected by the nature of a company's business. Reference is made in the foregoing to a manufacturing company with standardization centralized on a broad company scale. In some cases, the scope of the standards activity might be restricted; for example, to the purchase and stock of maintenance items. It is logical in such instances for the standards work to be placed in the purchasing department. In other instances, it might be felt that standards sections should be established in engineering, manufacturing, etc, or in decentralized components. Such organization can serve a purpose and is often advisable to take care of local problems by people who are closest to the specialized work. Local organization can well implement broader company standards organization, and all such standardization is mutually supporting. Obviously, there would be disadvantages for local groups to duplicate the work of each other in solving the same problems and developing a variety of solutions.

A fifth factor concerns the evaluation of a standards department and is included only because this is a favorite question. With the exertion of the necessary effort, the value of standards can be measured in dollars and cents in an industrial company in sufficient instances to justify standardization. It is questionable, however, if it is fair or advisable to ask a standards department to justify its existence in this manner, particularly if its scope is company-wide in character. Demand for evaluation in dollars and cents can be a sign of lack of understanding of the nature and importance of standardization by management; and relates importantly to our previous discussion bearing on the attitude and expressed desire of management in organizing a standards department. Standardization is a continuing and prolonged process.

It is often difficult for a standards department to trace the many applications of standards and to establish dollar values before and after standardization. When standardization concerns a specific function, it is natural for that function to claim credit for any improvements in its operations. For that reason, evaluation in the name of standardization or a standards department tends to create competition for credit, and any explanation of drastic improvements are liable to be interpreted as a reflection on those responsible for the original condition. It usually is not advisable, therefore, for a standards department to point out horrible conditions in an operation and then expect close cooperation from its personnel. If evaluation of a standard is wanted in dollars and cents, it should be requested from application groups. As a matter of fact, evaluation should be essential to the management of such groups in measuring performance.

Perhaps there are other and more important factors to be considered in organizing a standards department, but undoubtedly they will be brought out by other speakers. I shall proceed, therefore, to a brief review of the history and explanation of the organization and procedure of the G-E Standards Services Department. As a word of caution, it should be noted that the present organization was developed over the years to meet the specific requirements in the General Electric Company, and a similar organization and procedure might not be suitable to meet special conditions of other companies. It is for this reason that I have elected to comment on some of these factors before referring to the General Electric organization.

Organized standardization goes back many years in the Company since standards have been vital in the development of the electrical industry. In the early days, product and certain technical standards were handled by subcommittee action under a general standardizing committee. Materials, finishes, and various other subjects were handled by a variety of other committees or sections of the Company. There were some disadvantages to this procedure, and hence a series of General Electric standards books was established in 1930 to improve the presentation of certain types of engineering standards. This work was coordinated in the Engineering Department as a staff activity and depended upon the cooperation of various other Company components. In 1938, the engineering group handling internal Company standards was combined with a similar group in the Commercial Department who had been following our product and electrical standards work in the National Electrical Manufacturers Association, the American Institute of Electrical Engineers, and ASA. The combination was established as a Standards Department, marking recognition of the desirability of a department of this kind to serve the standards needs of the engineering, manufacturing, and commercial organizations. After the war, the Company was reorganized in a vertical fashion, and the standards department eventually became a division of the Company-wide Executive Department. With further refinement in Company organization, it became the Standards Services Department of the Engineering Services Division. As such, its basic purpose is to provide services in respect to standards to the various divisions and departments who are responsible for the design, manufacture, and sale of Company products. In general, it provides or seeks to provide those standards that are needed by two or more departments or plants. If a subject is of exclusive interest to a single department or plant, such department or plant should be in a better position to develop and handle such standards for themselves and standards organizations of different descriptions exist or are being organized locally. The Company standards department, of course, is available for advice and a certain amount of assistance in this respect, since it is charged with responsibility to promote standardization and, as a service group, to teach and counsel on standards matters.

In discussing relations with other components, it might be appropriate to say a word about avenues of approach in the development of standards. At first it was thought that the activities of the G-E Company standards department should be limited to coordination and that practically all development should be left to committees, task forces, or company components in specialized fields. After operating in this manner for many years, it was found that accomplishment was erratic and tended to decline as immediate departmental operating problems absorbed more of the time and energy of individuals

Distribution unit of standards department during preparation for a distribution of standards information. C. S. Blessing, supervisor of the unit, is at right.

who held committee memberships. It became apparent, therefore, that if Company standards were desired, personnel should be provided to do such work in certain fields as a full-time standards job, utilizing the specialized knowledge and experience of operating personnel as consultants in the drafting of a standard or in its improvement during the period of circulation for comment. The standards department was accordingly expanded, and the eventual size of the department will depend upon the demands of operating groups.

Although this change occurred in the basic manner of operation in certain fields, it can be observed that task forces and specialists in other Company components still contribute greatly to Company standards. For example, certain common problems of sufficient importance and urgency to operating groups arise from time to time to justify the appointment of special task groups to explore conditions and develop solutions in the most expeditious way. In other instances, the Standards Services Department calls conferences where one or more sessions are more advisable than individual consultations to develop recommendations or to reconcile differences in opinion. Also, Company laboratories study many technical questions, and they are an important source for the pool of technical information and recommendations that appear in General Electric standards books for the solution of our problems. Bringing out again the fact that G-E organization and procedure are tailored to suit G-E requirements, it might be observed that there are conditions in other companies where practically all subjects are of sufficient personal interest to the management of decentralized units to justify the entire conduct of company standardization on a committee or task force basis with standards personnel as the coordinating and publishing medium.

Since the location of the Standards Services Department in the organization structure has been mentioned, it might be of interest to proceed to the organization of the department itself. It is divided into two sections. The duties of these two sections are:

(1) Company Standards Services Section:
(A) Assist operating departments and other Company components in the field of Company standards by (*a*) formulating plans for the development, improvement, and modification of standards, (*b*) preparing and issuing specifications and standards on materials, finishes, components, test methods, processes and practices, (*c*) providing suitable classifications and documentation of standards, (*d*) participating in standards activities in ASA, ASME, ASTM, etc., to the extent desirable to augment Company standards.
(B) Assist operating departments and other Company components in the field of product identification by (*a*) establishing and maintaining a Company-wide system of product identifications, and (*b*) issuing nameplate standards and approving designs and layouts of such plates.

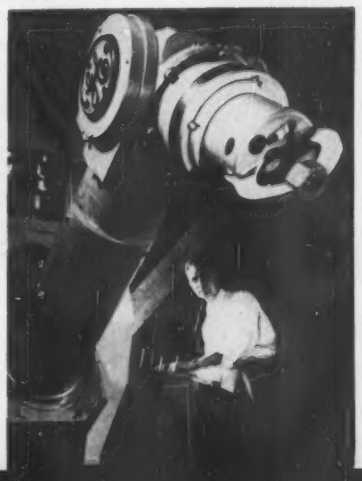
(2) Industry Standards Services Section:
(A) Assist operating departments and other Company components in the field of outside standards, particularly regarding (*a*) effective relations with outside organizations active in standards affairs, (*b*) providing advice to Company components on outside rules, and (*c*) making recommendations for standards and obtaining consensus within the Company on general and special electrical standards, and (*d*) representing the Company as desired on NEMA, ASA, AIEE, National Electrical Code Committee, and other society or association activities on standards, codes, and ordinances, etc.
(B) Assist operating departments and other Company components in the field of technical and professional society activities, particularly regarding (*a*) participation of G-E personnel, and (*b*) presentation of papers and discussions to contribute to engineering and scientific knowledge.

The Company Standards Services Section is composed of a Materials and Processes Unit with eight standards engineers handling metallic and nonmetallic materials, chemicals, applied finishes, tools and equipment, processes, and methods of test. It contains a Parts and Practices Unit having three standards engineers handling component parts, design data, and various practices. It also contains specialists for product identification and for nameplate approvals, and it has a Distribution Unit to handle the distribution and stock of Company standards. Some 12,000 standards books are maintained, and service requests for extra copies of specifications and data are at the annual rate of 600,000 sheets.

The Industry Standards Services Section is composed of three standards engineers at present with the duties previously mentioned.

I shall not take the time here to describe the various General Electric standards books, since we are making available a copy of an internal publication which we use to explain the kinds of information that are available and how to find them in our numbering and filing system. While provision is made in these books for many sub-classes of information, the publication and numbering system do not necessarily indicate if information is available on each subject. Standards are prepared upon the request of Company components, and these requests in the past have principally concerned materials, parts, finishes, and test methods required in the manufacture of our commercial products. There has been considerable increase in recent years in the demand for specifications and data on materials used as ingredients in the manufacture of other materials and on materials used as operating supplies. The demand is increasing for standards and specifications on tools and equipment and on various practices. While a considerable number of Company standards have been developed and issued, a great deal remains to be done to provide specifications and data on the many materials and parts needed for various G-E product lines and to develop solutions to other internal and external standards problems that are of concern to different parts of our organization. This is a cooperative venture in the General Electric Company which it is our privilege to promote and assist.

G-E's robot — largest mechanical arm — replaces men in radioactive areas.



COLOR for Safety

AS you study your plant operations to assure greatest efficiency and safety, you will want to have before you the new and enlarged edition of the American Standard Safety Color Code.

The use of color as a quickly identifiable and easily understood method of marking danger spots in a plant has been widely accepted within the past few years. Color has proven to be an effective means of preventing confusion on the part of employees who might not be able to read legends quickly or distinguish them clearly from a distance.

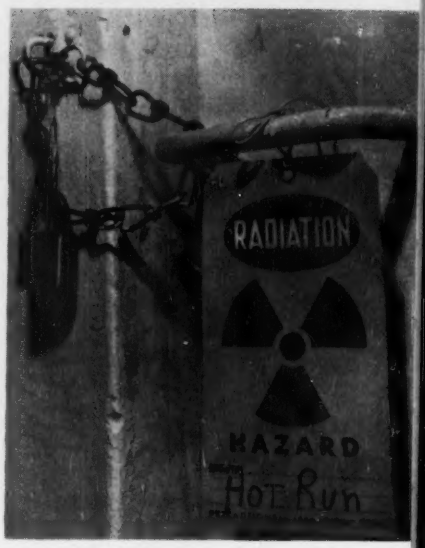
One of the important tools for bringing about nationwide uniformity in the selection of specific colors for specific purposes is the Safety Color Code for Marking Physical Hazards. The 1953 American Standard, just published, is an expanded edition of an American War Standard that has been put to wide use throughout industry.

The new peacetime edition not only provides a greater range of colors than did the wartime standard but it also includes technical definitions so the colors recommended can be reproduced and lists physical samples that are available to help those who want to put its recommendations into effect.

No safety program would be complete today without recognition of the hazards from use of radioactive materials in industry. The new edition of the Safety Color Code recognizes this hazard and recommends the use of purple to call attention to radiation hazards. The use of blue has been added to give warning so employees will not attempt to operate dangerous machines while they are under repair and temporarily unguarded. Orange, too, has been included for the first time to indicate that some protective cover or door has been removed and should be replaced.

Despite its widespread and admittedly effective use in industry, color has one inherent disadvantage as a safety tool. Surveys show that 2 percent of all men are colorblind. Although a small percentage of the total working force of the nation, this is a large enough number to be reckoned with. If only one individual fails to see a red danger signal, he can cause an accident fatal to his fellow workers.

Most colorblind men are unable to distinguish red and green. Because the question of colorblindness is so important, the National Bureau of Standards spent some years experimenting and studying the problem, particularly in its relation to red and green. Its findings were published as a special research paper. These research findings were made available to the sectional committee that developed the safety color code. A special subcommittee on the subject, formed by the sectional committee, had Harry Keegan of the National Bureau of Standards as it chairman. By defining the yellow and strong limits of the green and the purple and gray limits of the red the committee provided colors sufficiently different that they can be distinguished by the majority of colorblind individuals. Surveys show that the difference can be recognized even though an individual may not be able to see the colors themselves.

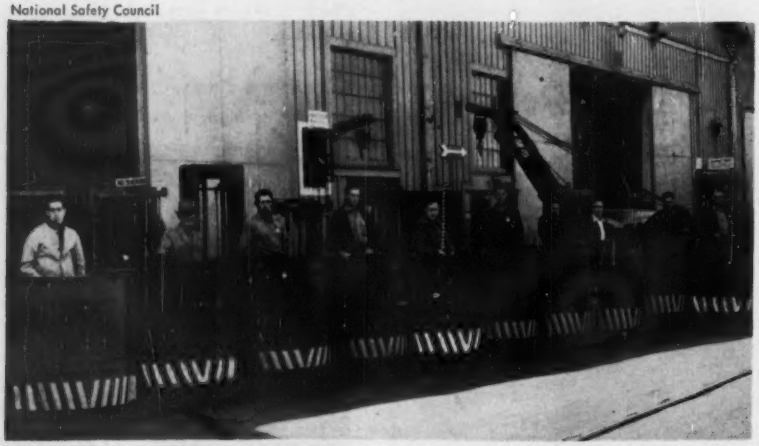


Westcott, Oak Ridge

At Oak Ridge National Laboratory tag on locked door warns against radiation hazard. This well-known radiation symbol is in the purple color recommended in the new American Standards safety color code, on yellow background.

Mare Island Navy Yard's safety program calls for color. Yellow and black stripes make these industrial power trucks conspicuous, thus cutting down accidents.

National Safety Council



The standard does not recommend that the use of colors for identifying danger spots should replace the proper guarding or elimination of hazardous conditions. On the other hand, the use of the code should supplement the use of adequate guards.

Because a large number of color signs may prove confusing to employees, it is recommended that the location of the signs be carefully stud-

ied and color markings be kept to a minimum. Thus, greater emphasis is placed on those actually used.

The standard colors recommended are red, orange, yellow, green, blue, purple, black and white, or combinations of black and white. Each has its particular meaning and use.

What the Colors Mean

Red is the basic color for three important purposes — to identify fire protection equipment and apparatus, to warn of danger, and to indicate "stop."

Orange designates dangerous parts of machines or energized equipment which may cut, crush, shock, or otherwise injure employees working with the machines. The color shouts a warning whenever the normally guarded part happens to be temporarily unguarded. It is used, for example, inside movable guards such as picker guards in textile plants; and on exposed parts of pulleys, gears, rollers, and cutting devices.

Yellow is the basic color for designating "caution" and for warning against physical hazards that an employee might strike against, or that might cause him to stumble, fall, or trip. Yellow (or yellow in combination with black) for example, may be used to mark corners of storage piles; to call attention to guy wires; or for exposed and unguarded edges of platforms, pits, and walls.

Green is recognized as the basic color for designating "safety." It indicates the location of first aid equipment and other safety equipment, such as safety bulletin boards, gas masks, first aid kits, stretchers, and safety deluge showers. It does not, however, apply to fire protection equipment: red is the color traditionally identified with fire protection.

Blue is used only to warn against starting, using, or moving equipment under repair. It should be used in warning signs at the starting point or power source of machinery, and should be displayed conspicuously when employees are working inside equipment such as elevators, ovens and vats, and boilers.

Purple is possibly the most important new color in the 1953 code. It identifies radiation hazards of the following types: x-ray, alpha, beta, gamma, neutron, proton, deuteron, and meson. It is intended for use in marking rooms and areas where radioactive materials are stored or handled or which have been contaminated with radioactive materials; and to mark cans used in disposal of contaminated materials. It should also be used in signal lights that indicate when radiation-producing machines are in operation.

Black and white are the basic colors for traffic and housekeeping markings.

In the past some plants have used yellow to designate traffic aisles, storage locations, and similar housekeeping details. The committee believes that since the code recommends the use of yellow to signify "caution," it should not be used for ordinary traffic markings which have no caution significance.

Color Limits Specified

For the information of those who want to follow the recommendations of the standard, a table is included giving in detail the exact technical limitations of the colors specified. Since many of those who use the standard will be interested in obtaining actual physical samples of the colors in order to compare them visually with the color as it appears on the product they intend to use, a table of commercially available color samples is included. These samples may be purchased from several sources, as indicated in the standard.

In developing its recommendations for the use of color for marking physical hazards, the committee also took into account a number of other American Standards that refer to the use of color for safety purposes. Among these are the American Standard Specifications for Industrial Accident Prevention Signs and the American Standard Scheme for the Identification of Piping Systems.

The first edition of the Safety Color Code was developed during the war at the request of the War Department. The Quartermaster Corps of the Army had experimented with the use of color for identifying potential hazards with the result that the number of accidents had dropped sharply. The Department asked ASA to develop an American War Standard that could be adopted generally by industry to cut down accidents in plants, warehouses and laboratories working on war contracts as well as in the War and Navy Departments' own plants, warehouses, and laboratories. Soon after the standard was issued, one of the Army Service Depots estimated that during the first year after adoption of the code disabling injuries were cut from 13.25 to 6.99 per each 1,000,000 man hours worked.

This wartime edition, however, only recommended the use of red, green, yellow, and black and white. It did not at that time recognize the need for the use of orange, blue, and purple.

The peacetime edition of the standard was developed by a sectional committee sponsored by the National Safety Council. Its complete title is American Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1953. Reuel C. Stratton, Travelers Insurance Company, is chairman of this committee; Arthur S. Kelly, the National Safety Council, is secretary.

The color red identifies fire protection equipment and apparatus. Here it marks wall, floor, and fire extinguisher.

DuPont

A New Look at Standards

by Bryce P. Holcombe

THOSE of us in organized labor are perhaps as keenly aware of the values derived from standards as any other group represented in the American economy. We of the American Federation of Labor recall with great pride the fact that we have in the past worked so closely with ASA that, throughout these long years, no discord whatsoever has occurred. We can all agree that this mutual cooperation was possible because of the voluntary nature both of your Standards Association and of the labor movement. It is amazing when one reflects that all American Standards have been developed and applied on a completely voluntary basis throughout the American economy.

I have the honor to represent the Brotherhood of Painters, Decorators and Paperhangers of America, American Federation of Labor. While our Brotherhood is generally referred to as the painters' union, it nevertheless covers a wide range of activities confined principally to the construction industry. In this immediate field our 220,000 members perform the following types of work: — painting, decorating, paperhanging, glazing and glass work, sign and pictorial work. In manufacturing establishments, our members are engaged in making paint products. Last but not least, our organization represents the nation's distinguished scenic artists. Reviewing the wide range of our activities or pursuits of our membership, it is easily understood that we do, and in fact should have, a keen interest in standards. Because of our interest in American Standards, we are closely associated with a number of the ASA Member Bodies, such as the Outdoor Advertising Association of America, Gypsum Association, American Ladder Institute. We are, of course, very active in the program on American Safety Standards.

A new day has dawned in so far as American Standards are concerned. This new dawn has resulted from legislative action by the national Congress as well as within some 14 or 15 states of the Nation. Standards are accomplished simply by a voluntary desire of the American people to join together with all interested parties, in a democratic fashion. The result has been standards which are respected and in fact used by industry, management, and labor throughout the Nation.

The new day, I think, offers real cause for concern. The legislative action on the national level is to be found in the 1947 amendments to the Wagner Act. This Act provides for administration of the law based upon "work assignment." When management makes a work assignment, then and there such assignment brings into action amendments to the Wagner Act. Because of this fact, labor management negotiations, mediation, and arbitration are relegated to the background, notwithstanding the fact that conferences, labor mediation, and arbitration have over the years served in large measure voluntarily to raise American standards and thereby make full use of such great organizations as ASA. The "work assignment" as well as a number of other provisions of the 1947 Act were found to be unneeded and of no value in the construction industry. For this great industry, both management and the building trades labor organizations petitioned Congress to amend the Act by excluding the construction industry from its provisions. In this joint venture by management and labor, no difficulty was encountered in having a bill passed by unanimous vote of the United States Senate. This bill was introduced by one of the authors of the original 1947 Act, the late Senator Robert A. Taft. The House of Representatives for some reason failed to enact the bill passed by the Senate, hence this great industry continues to be burdened with this set of unfavorable conditions.

The industry would be greatly retarded by some of these conditions were it not for the fact that both management and the unions have jointly formed a jurisdictional board which functions at Washington with an impartial chairman. The joint board works for the settlement of jurisdictional disputes arising within the construction industry as a result of work assignments.

Bryce P. Holcombe

Mr Holcombe is Washington representative of the Brotherhood of Painters, Decorators and Paperhangers of America, American Federation of Labor. His appeal for cooperation on standards, representing a different viewpoint from that usually under consideration, was presented before the Standards Council of the American Standards Association at its meeting December 8, 1953.

Fortunately, all of these disputes which have resulted from work assignments have been adjusted or settled by the joint board and have, therefore, not reached the Labor Relations Board. Nevertheless, provisions of this statute remain on the books and could badly damage the harmonious relationship which now exists between management and the unions in the construction industry. All of this makes it more than ever important that standards and standard specifications be kept up to date. To do this, I assure you, is a big task because of the constant changes in design and production of material and equipment which is put to use by the construction industry.

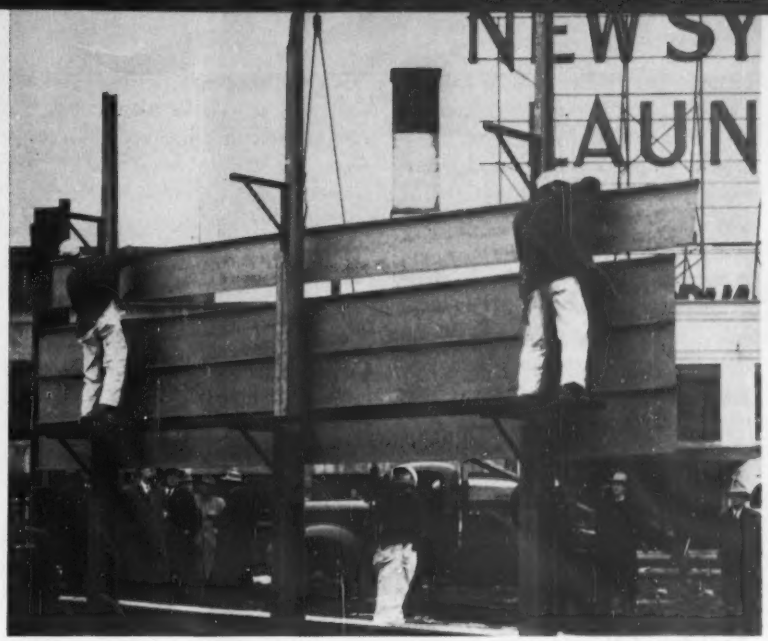
To illustrate my point in this con-

nection, I call attention to ASA project A97, "Standard Specification for Gypsum Wall Board and Interior Finish." The sponsors of this project are the American Institute of Architects and the Gypsum Association. American Standard specifications were published in March of 1953, and since their adoption no jurisdictional dispute or discord has developed in any area or location, in the matter of dry-wall construction. Before these standard specifications were developed and published, however, there were a great number of disputes, especially in pointing and taping of the wall board joints. Some manufacturers specified one type of material for joining the boards, while others used still a different joint material. As usual, the standardization has completely removed jurisdictional difficulties. It is with pride that I report that I served on this committee as a representative from my organization, one of several interested groups.

Both management and labor of the building industry have made great progress in putting to use standards during the past years. This splendid record of labor-management relations would not have been possible if full freedom had not been available to the parties. Jurisdictional discord and disputes in the building industry, as anyone can understand, have been a costly matter. In the main, no group has received any profit from jurisdictional conflicts.

Special ceiling boards are here being installed to help control industrial noise.

Owens-Corning Fiberglas Corp



General Outdoor Advertising Co

Outdoor signs and display structures are covered in American Standard

A review of the record in the industry will reveal that in large measure these disputes have occurred in most cases where new materials and new designs have been put to use before standards have been developed. In this connection I think it well to point out that we regard standards in a two-phased manner. One phase covers the manufacturers' standards of product; the other, of course, covers the manufacturers' specifications.

I have long been of the opinion that if manufacturers and the building industry could establish a permanent committee to consider each new product put to use and thereby use their influence to develop standard specifications at an early date, a great deal of jurisdictional discord would be avoided. By no means are jurisdictional troubles solely a result of discord within the ranks of the labor organization; rather, quite often contractors and sub-contractors are involved in these costly matters.

It has been found when disputes have arisen over application of new materials, that while labor unions themselves operate with several sets of standards, quite often the agreements and constitutions of building trades unions do not contain provisions for application of the new materials. The organization I have the honor to represent is now in need of certain standards and specifications in the matter of plastic products that are being put to use in the industry for transfusion and reflection of light. Also, we are making plans to assist in extending standards for certain new paint materials. It is, of course, our hope that the American Institute of Architects will assist the Brotherhood in forming these standards committees. It is my hope to have our industry request ASA to assist us in these two projects within the near future.

I am fully aware of the fact that ASA is not a legislative body. Nevertheless I think it well to call attention to the effect of state legislation. Some 14 or 15 states of the nation have in the recent past enacted laws which are commonly called "right-to-work laws." This state legislative program which is still going full speed ahead was encouraged by certain provisions of the Wagner Act amendments. Those of us who are familiar with Interstate Commerce Law are fully convinced by now that perhaps no other legislation has proved to be as valuable to com-

merce as has the Interstate Commerce Law. This program of unneeded state laws will without doubt prove to be a burden upon commerce and industry in this country; the result will be that American Standards, and especially their application, will be adversely affected.

The new state laws will, undoubtedly, cause unprecedented disruption in management-labor relations, mainly because most of these laws weaken labor unions. This will be the case notwithstanding the fact that, by and large, American management has by this time earnestly entered into a program of real management-labor cooperation.

During World War II one of the states enacted a so-called "Right-to-Work Law." This law so badly interfered with management and labor relations that the U. S. Navy, starting to build a rocket plant, in desperation permitted the labor unions to have temporary office buildings constructed on the Federal Reservations. This was necessary because the state law was of such a nature that the recruitment of labor and the execution of the work could not be performed otherwise without long-drawn-out delays. The government having permitted unions to have business offices on the reservation was thereby enabled to build the rocket plant upon schedule.

Surely we can all readily agree that the widespread safety programs for prevention of accidents in industry are such as to require the full and unrestricted interest and participation of both management and labor. I am forced to question the continued effectiveness of our accident prevention programs in those areas where labor unions are weakened and thereby their leadership removed from full participation in these worthy programs. In view of my very strong thoughts in connections with these new state labor laws, I would urge that the law-making bodies review the record during World War II. The records of production achieved in those critical days were in large measure made possible, not by statutory or legal requirement, but by management and labor. Those public officials who headed war agencies have highly praised and on many occasions have awarded plaques to both for the job well done.

It can be strongly stated that these new state laws will in the main increase discord and conflict rather than reduce them. Surely the effect upon commerce and industry will be far-reaching.

As to labor-management relations in industry, I think the American Standards Association and its Council should give serious thought to these legal matters. It may well be that all groups interested in American Standards will find it necessary to cooperate more closely in the future in the development of manufacturing standards, and especially application standards.

Certificates of service were presented by the American Standards Association to members of the ASA Standards Council at its meeting December 8, 1953. Above, left to right, E. B. Paxton, General Electric Company, representing the American Institute of Electrical Engineers; R. M. Gates, chairman of ASA's Executive Committee, who presented the certificates; Sabin Crocker, Ebasco Services, New York, representing the American Society of Mechanical Engineers; J. H. Edwards, Rome Cable Corporation, New York, representing the National Electrical Manufacturers Association; J. R. North, Commonwealth Associates, Jackson, Michigan, representing the American Institute of Electrical Engineers.

Others to whom certificates were presented but who were unable to attend the Council meeting were: M. M. Brandon, Underwriters' Laboratories, New York, representing the Fire Protection Group; W. L. Sharpe, W. L. Sharpe Contracting Company, Memphis, Tennessee, representing the Associated General Contractors of America; W. T. McCargo, Carborundum Company, Niagara Falls, N. Y., representing the Grinding Wheel Institute; and C. A. Young, American Petroleum Institute.

STANDARDIZATION IN THE COMMONWEALTH OF VIRGINIA

By Samuel P. Kaidanovsky

Centralized Purchasing

Centralized purchasing as defined by the Commonwealth of Virginia is "The delegation of authority, by law or executive order, to one division of an organization to purchase all equipment, materials, and supplies, and services required by all other departments, divisions, and sections of the organization. The scope usually includes authority to transfer or to sell equipment, materials and supplies considered surplus to the immediate needs of the departments, divisions or sections within the organization."

Development of Centralized Purchasing in the Commonwealth of Virginia.—

Centralized purchasing in the Commonwealth of Virginia had its inception with the establishment of the Division of Purchase and Printing as required by the Reorganization Act of 1927. Section 2 of that Act provides that the Director of the Division of Purchase and Printing shall exercise the powers and perform the duties previously conferred by law upon the State Purchasing Commission, the State Purchasing Agent, and the Superintendent of Public Printing.

Under a further reorganization of 1948 the Division of Purchase and Printing was transferred to the then newly created Department of Accounts and Purchases of the State Government with the Comptroller serving as the Director of that Department.

The total purchases of a wide variety of equipment, materials, and supplies for the 135 departments, institutions, and agencies of the Commonwealth of Virginia, including those of the Department of Highways and the Alcoholic Beverage Control Board, amount to approximately 25 millions of dollars per year, about 12 million of which are procured under centralized legislation.

The Division of Purchase and Printing, Mr R. C. Eaton, Director, is the centralized purchasing organization of the Commonwealth of Virginia.

Division of Purchase and Printing

Organization. — The Division of Purchase and Printing consists of the following sections and services: (1) Buying, subdivided into seven units: Foods; Fuels; Printing and Binding; Textiles, Furniture, and Notions; Office Equipment and Supplies; Farm and Industrial Equipment and Supplies; and Building and Construction Equipment and Supplies; (2) Delivery Followup; (3) Bookkeeping; (4) Supply Room, Mail, Duplicating, and Surplus Property; (5) Sources of Supply, Central Files, and Records and (6) Research and Standardization Section.

Research and Standardization Section. — Primarily this section was established to develop a program of standardization of equipment, materials, and supplies used in large quantities by a number of state agencies and to prepare Virginia Standard Specifications for such standards as adopted. This program was interrupted during World War II and the activities of the Research and Standards Section were devoted to improving Division techniques, systems, records, and procedures to serve as a better foundation for a standardization program, which is now under way. The Research and Standardization Section, under the direction of Mr I. R. Vanderberry, Research Counsel, has redesigned and established a standard store system for the general supply room. It has developed a source of supply section with mechanical equipment; has standardized and improved procedures for soliciting bids; and has compiled a procurement classification system of commodities purchased by the Commonwealth of Virginia. This has served as an initial step in the development of a State Procurement Catalog. This Section has also compiled a Centralized Purchasing Manual — an outline of operations and policies of the Division of Purchase and Printing.

COMMONWEALTH OF VIRGINIA – PROCUREMENT CATALOG

CAT. NO.	DESCRIPTION	UNIT OF REQ.
	5205 - BUZZERS AND GONGS	
	BUZZER, ELECTRIC	ea
	NON-WEATHERPROOF	
	Locking adjustment	
	Operates on 8 to 10 v AC or 6 to 8 v DC	
	Chrome finish, 2 mtg holes	
5205 20 0110	1-5/8" h x 1-1/8" wd x 1/2" thk	
0120	2-1/8" h x 1-5/16" wd x 3/4" thk	
0130	2-9/16" h x 1-3/4" wd x 1" thk	
0140	3" h x 2" wd x 1-1/4" thk	
0150	3-1/2" h x 2-1/4" wd x 1-1/2" thk	
	CHIMES, ELECTRIC	ea
	DOOR SIGNAL WITH SHORT TUBES	
	Operates on 10 v AC	
	1 double note for 1 door	
5205 35 1010	4" h x 7-1/2" wd x 3" d	

Mr Kaidanovsky, Consulting Engineer, is former chairman Federal Interdepartmental Standards Council; technical consultant Federal Specifications Board; and editor STANDARDS WORLD.

Standardization of Materials Equipment, and Supplies — Source of Authority. — Article 3, Section 2-255 of the 1950 Code of Virginia provides that "so far as practicable, all materials, equipment and supplies, the purchase of which through the Director of the Department of Accounts and Purchases is made mandatory, shall be standardized by the Director. Such standards shall be determined upon the needs of all using agencies, so far as their needs are in common, and for groups of using agencies or single using agencies so far as their needs differ. When changes or alterations in equipment are necessary in order to permit the application of any standard, such changes and alterations shall be made as rapidly as possible."

Advisory Board on Standards. — Article 3, Section 2-256 of the 1950 Code of Virginia provides that "... the Board of Accounts and Purchases shall consider and advise as to the needs of the various state activities and how far they can be reasonably harmonized and covered by standard specifications."

A Board of Accounts and Purchases appointed by the Governor assists the Director of Accounts and Purchases in the establishment of standards. The Board meets each month or upon the call of the chairman.

Membership of the Board. — The Board now is composed of five members: C. H. Wheeler, Treasurer of the University of Richmond, Chairman (elected by the Board); W. C. Carrick, Retired Comptroller of Richmond, Fredericksburg & Potomac Railroad Company; Lester Williams, Purchasing Agent, Larus and Brother Company; W. Frank Smyth, Jr., Superintendent, Virginia State Penitentiary; Stuart Cassell, Business Manager, Virginia Polytechnic Institute. The Secretary, I. R. Vanderberry, Research Counsel, Division of Purchase and Printing, is elected by the Board.

Agency Liaison Officers. — In order to keep the Board abreast of the problems of using agencies, and to facilitate development of standards, each agency head names a Liaison Officer through whom all standardization work affecting that agency clears.

Development of Standard Specifications

Establishment of Standards. — Standardization of commodities selected for study is developed in two stages: first, through simplification — the elimination of all unnecessary types, grades, styles, colors, sizes, and qualities of each commodity, consistent with the needs of using agencies; second, through the development of standard specifications for the selected kinds, styles, color sizes, qualities.

Procedural Steps. —

(1) Selection of the commodities to be considered.

(2) Collection of data as to quantity used by each agency, variety of kinds purchased, with samples to show quality.

(3) Study of procurement problems of using agencies through agency liaison officers.

(4) Submission of drafts of proposed specifications to agencies through liaison officers and to representative manufacturers and vendors for comments and suggestions.

(5) Collation and analysis of comments received and subsequent preparation of tentative specifications.

(6) Submission of tentative specifications to the Board of Accounts and Purchases.

(7) Consideration of action of the Board by the Director of the Department of Accounts and Purchases; publication of his conclusions in the form of Standardization Releases; and distribution of releases to using agencies.

(8) Conversion of Standardization Releases into Commonwealth of Virginia Specifications. (There are at present 45 approved standard specifications and others are in process of development.)

(9) Revision and amendment of Specifications when necessary.

Criteria for Specifying Requirements for Commodities Purchased by the Commonwealth of Virginia

The Commonwealth of Virginia is considering the following methods of specifying quality requirements for commodities in its procurement program:

(1) Brand or trade name

(2) Blueprint or dimension sheet

(3) Chemical analysis or physical properties

(4) Description of materials and method of manufacture

(5) Description of purpose or use (Performance Specification)

(6) Identification with standard specification known to the vendor and to the trade generally (reference to nationally recognized specifications and standards)

(7) Sample

Brand or Trade Name. — To be used when:

(a) Branded products are found superior to all others for the purpose intended.

(b) Composition is secret, unknown, or patented.

(c) Volume purchased is inconsequential, expense of investigation and formulation of detailed specifications unjustified.

(d) This method places the buyer in entire dependence on the vendor's reputation for quality.

Blueprint or Dimension Sheet. —

(a) Advisable for purchase of dimensional items such as forgings, castings, structures, etc.

(b) Their use provides easy method of checking compliance.

Specification by Chemical Analysis or Physical Properties. —

(a) Excellent for some materials when compliance with specification requirements can be checked accurately by laboratory tests.

(b) Not recommended when satisfactory substitute could perform the same results.

Description of Material and Method of Manufacture. — Should be avoided when possible. Vendor in better position to determine the proper material and method of manufacture than the buyer. This method places the entire responsibility on the buyer and restricts competition.

Description of Purpose and Use. — Performance Specification. — Excellent form of specification, adaptable particularly to machines and tools. Buyer not primarily concerned with materials and method of manufacture so far as durability and the performance requirements are met. This method places the responsibility entirely on the vendor.

Identification with a Standard Specification known to the vendor and trade generally. — Reference to nationally recognized specifications and standards. — Reference to American Standards, ASTM and ASME specifications, and applicable standards and specifications of other nationally recognized technical and professional societies, also the use of Government standards and specifications, such as Federal, U.S. Department of Agriculture, and others, is recommended for many commodities.

Sample. — Should be avoided unless no other method of specifying requirements is possible.

Outline of Form of Commonwealth of Virginia Specifications

Commonwealth of Virginia Specifications are prepared according to an approved outline of form patterned after the Outline of Form for the Preparation of Federal Specifications.

Virginia Specifications are designated in conformity with the following classifications and code symbols; they are numbered consecutively under each code symbol; the Commodity group is also indicated.

Specifications Code Symbols	*Classification for Specifications*
A	Animal Products
C	Brooms and Brushes
E	Cable and Wire (insulated)
G	Canvas Articles (manufactured)
I	Chemicals and Acids
K	Cleaning, Polishing and Abrasive Material
M	Coal and Coal Products
O	Coal-Tar and Products
Q	Cooking and Heating Apparatus, Furnaces and Ovens
S	Cordage — Twine and Products
U	Drugs and Medicines
W	Dry Goods and Notions
Y	Electrical Apparatus
BB	Fruits
BD	Fruit Products
BF	Furniture
BH	Glass and Glassware
BJ	Groceries
BL	Hardware
BN	Instruments
BP	Insulating Materials
BR	Knit Goods, Netting and Webbing
BT	Leather and Leather Goods
BV	Livestock, Poultry, Fauna
BX	Lumber and Timber
BZ	Lumber Products
DA	Machinery
DC	Meats and Seafoods
DE	Metals
DG	Metal Products
DI	Minerals and Mineral Products
DK	Paints, Pigments, Varnishes, and Products
DM	Paper and Paper Products
DO	Petroleum and Petroleum Products
DQ	Pipe, Pipe Fittings, Plumbing Fixtures, Tubes and Tubing (Metallic)
DS	Rubber and Rubber Goods
DU	Scales and Balances
DW	Suits and Uniforms
DY	Textiles (yardage)
FB	Textile Products
FD	Toilet Articles
FF	Tools
FH	Vegetables
FJ	Vegetable Products
FL	Vehicles
FN	Wood Products
FP	Printed Material
FR	Structures

Materials are tested for compliance with specifications. Here, chemist uses Beckman Spectrophotometer with flame attachment in making chemical analysis.

Inspection, Certification, and Testing

All purchased commodities are inspected and tested to ascertain if they meet the requirements of specifications. Methods of inspection and tests are outlined in each specification.

Agency vs. Centralized Inspection. — Because purchases of the Commonwealth of Virginia are delivered directly to so many agencies within the State, it has been found that centralized inspection is impracticable. Instead, designated representatives of using agencies are made responsible for checking the quantity of shipment and for physical examination of the delivered goods to insure general compliance with the provisions of the contract. Under such circumstances it is the responsibility of the head of each using agency to develop procedures suitable to local conditions.

State Division of Markets Inspecspection. — Meats, meat products, poultry and dairy products purchased in compliance with USDA grades are inspected at the shipper's plant or at the using agency.

State Division of Markets Inspection. — Processed foods for which USDA grade standards have been applied are inspected by the Processed Food Section of the State Division of Markets, sealed and stamped "Accepted for Commonwealth of Virginia."

Certification of Quality by U. S. Licensed Inspectors. — Each shipment of cotton, cotton linters, hay, grain, and other commodities is certified by a U. S. licensed inspector that products meet or exceed the specified quality designations.

Certification by the Manufacturer. — A less desirable form of certification is that by an official of a company, that goods meet specification requirements. This form of certification sometimes is employed where Virginia State Specifications or Federal Specifications are called for. This method provides reasonable assurance of compliance.

Testing. — Testing for the Commonwealth of Virginia is performed on contract basis by Froehling and Robertson, Incorporated (Inspection Engineers, Chemists, Bacteriologists). This organization provides research personnel and laboratory facilities required by the Division of Purchase and Printing to supply the complete testing services needed to determine procurement specification and compliance. This contract covers all testing and consulting service in connection with the State Procurement Program, and is available to all State agencies.

Procurement Classification System

Inadequate descriptions and specifications and different terminology of the great variety of commodities purchased by the Commonwealth of Virginia, resulted in delay and errors in the State procurement program. As the initial step in the solution of this

problem, the Division of Purchase and Printing has compiled a procurement classification system in which most of the equipment, materials, and supplies purchased by the Commonwealth have been named and assigned to groups within general classes. The "Procurement Classification—Equipment, Materials and Supplies," published in 1945 as D.P. Publication No. 119b, consists of 706 pages. It is *not* a catalog, but has served as the first stage in the preparation of the Commonwealth of Virginia Procurement Catalog.

Catalog Terminology

Throughout the Catalog a standard nomenclature is being used.

Standard Item Name. — The generic name of affected equipment, materials, or supplies selected for catalog purposes.

Item Description. — Listing of each standard item by name and also of each variation, such as size, type, color, grade, and other descriptive characteristics of the item.

Class. — Very broad grouping of commodities as to their usage; e.g. Electronic Equipment, Hardware, etc. A title and number is assigned to each class.

Group. — A subdivision of a class into many small groups, with a title and a number assigned to each group within the class.

Catalog Number. — A number assigned to each variation of an item for positive identification through the procurement procedure.

Catalog Coding

Class. — Two digits indicate the class.
Group. — Two digits for the group within the class.
Standard Item Name. — Two digits.
Item Description. — Four digits.
Catalog Number. — A combination of ten digits.

Structure of the Commonwealth of Virginia Procurement Catalog

A catalog of all commodities regularly purchased by the Commonwealth of Virginia has been prepared on contract by Remington Rand Inc. Each commodity has been named, described, and identified by an individual catalog number. This catalog lists 83,340 articles resulting from a study of approximately 100,000 purchase orders. It consists of 2723 pages, 9 x 12 in., in loose-leaf form. The principal parts of the catalog are: Section I — Commodity Index and Section II—Classes and Groups.

Commodity Index. — Each standard item name is listed alphabetically and is indicated by a numerical code which is the first six digits of the assigned catalog number, designating the class, group, and standard item name.

Classes and Groups. — This section is set up by catalog classes. There are at present 28 classes numbered and designated as follows:

Class No.	*Designation*
12	Automotive and Transportation Equipment and Accessories, Proprietary Parts and Supplies
16	Communication and Signal Equipment and Proprietary Parts
22	Engineering Equipment. Supplies and Proprietary Parts
24	General Equipment, Proprietary Parts
26	Horticultural and Farm Equipment, Supplies and Proprietary Parts
28	Household and Institutional Equipment and Proprietary Parts
38	Refrigerating and Air Conditioning Equipment and Proprietary Parts
41	Building, Construction, and Power Plant Equipment and Proprietary Parts
44	Building and Construction Materials and Supplies
45	Hardware (not elsewhere classified)
46	Clothing
48	Educational and Recreational Equipment, Supplies and Proprietary Parts
52	Electrical Equipment, Supplies and Proprietary Parts
54	Fabrics
56	Fire Fighting Equipment and Supplies
58	Foods
62	Fuels (other than Gasoline)
65	Hospital, Medical and Laboratory Equipment and Proprietary Parts
66	Hospital, Medical and Laboratory Supplies (except Drugs and Chemicals)
67	Hospital, Medical and Laboratory (Drugs and Chemicals)
68	Household, Janitorial, Laundry and Cleaning Supplies
71	Industrial and Shop Equipment and Proprietary Parts
72	Industrial, Shop, and General Plant Supplies

Classes and Groups (continued)

Class No.	*Designation*
73	Office Equipment and Proprietary Parts
74	Office Supplies
75	Envelopes and Paper
76	Police and Traffic Control Supplies and Accessories
82	Printing and Related Services

Each class is divided into groups and each group is further subdivided by the selected standard item name of the listed commodity, usually broken down into various kinds, types, grades, sizes, colors, and other descriptive characteristics. To each variation of each commodity has been assigned an individual 10-digit catalog number for product identification. The first two digits indicate the class; the next two the group within the class. The remaining six digits are employed to identify the individual item. Two digits are used for the name and four digits for the item description.

For example, the catalog number of a 4-watt, white, 125-volt fluorescent lamp is 5219100010. This code number indicates

Class: 52 — Electrical Supplies
Group: 19 — Lamp Bulbs and Tubes
Item Name: 10 — Lamp, Fluorescent
Item Description: 0010 — 4 watt, white, tubular, 105 to 125 v, miniature bi-pin base, 5/8 in. diameter x 6 in. long.

Savings Through Standardization

As a result of the standardization program, the Commonwealth of Virginia savings amount to as much as 10 to 15 percent and in many instances better quality products are obtained at less cost than previously.

By simplification further standardization and elimination of small infrequent items now listed in the Catalog, its size will be reduced appreciably as will the record requirements by at least a third.

A visible card system, set up according to catalog numbers for recording all purchases by agencies and vendors, is used not only for administrative purposes, but serves as a basis for simplification and standardization studies and the development of Commonwealth of Virginia Specifications.

Recent Rulings on Unusual Accidents

The following interpretations have been handed down by the Committee of Judges of ASA Sectional Committee Z16 on accident statistics. They serve as a guide to companies who want to know how to count injuries due to unusual accidents in their safety record.

The American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, offers generally accepted rules for keeping track of a company's safety record. Monthly compilation of a company's accident toll shows at a glance when some change in operations or some unforeseen new hazard has caused a jump in the injury rate. Immediate action then can be taken to eliminate the hazard.

Safety engineers are invited to obtain interpretations of the standard by sending the facts on doubtful cases to the American Standards Association. Reprints of all the published decisions can be obtained from ASA.

Case 211

Employee was helping bend ten-foot sections of five-inch conduit pipe with a pipe-bending machine on the job site.

At approximately 2 A.M., with two co-workers he was in the process of taking a pipe from the machine and placing it on a dolly when a severe pain allegedly struck him in the lower back.

According to one of the men helping on the pipe, employee immediately told him of the pain. The employee told his foreman of the pain shortly after the accident but refused to go to the First Aid Station on the basis that he thought he would be all right the next day.

At the close of the work shift, employee allegedly stepped in a hole while walking to the clock alley, causing him to twist his back and aggravate the original injury. This was told to the foreman on employee's return to work the following shift. Employee also told of being unable to sit down to breakfast due to the back condition. At this time the foreman sent him to the First Aid Station where he was given a heat treatment. Following the treatment, employee returned to the job, although still complaining of his back. He was assigned and performed light work until near shift closing time. At approximately 3:35 A.M., employee's foreman instructed him to get an early start to the clock alley due to his back condition, necessitating his walking slowly. Employee then sat down on a bench or stool and started to put his overshoes on, preparing to leave as instructed by the foreman. When employee stooped to pull the shoes on, he was seized by a paroxysm of coughing, causing him intense pain, and causing a semi-paralyzed condition in his back. Employee was then transported to the First Aid Station where he stayed until 10 A.M., at which time he was transported by the company ambulance to an off-site hospital for further examination, and treatment if needed. Patient was hospitalized at the latter hospital for a period of four days, where the doctor's diagnosis shows "sprain of lower back."

The company wished to know if this injury should be included in the industrial injury rates.

The committee decided that this injury should be included in the rates on the basis that this employee did receive an injury arising out of and in the course of his employment which resulted in lost time.

•

Case 212

A company wrote in as follows:

"The employee involved is twenty-eight years old and was employed May 7, 1946.

"The case history dates back to January 5, 1948. While working as an electric utility lineman, he made an awkward step when descending a pole and felt a pain in his lower back. He continued duty but his back continued to hurt him. On January 7 he was sent to the doctor. The doctor reported a muscle strain in the lower back. The back was strapped and proper treatment applied.

"On June 20, 1949, while climbing a pole, he cut out and fell about six feet to the ground, landing on both feet in a standing position. He felt a pain in his lower back but continued on duty.

"On June 27, 1949, when raising a 4/0 copper conductor from crossarm to insulator position, he again felt a sharp pain in his lower back. He was sent to the doctor for treatment. The doctor diagnosed it as syondylolithesis. The employee was hospitalized and lost twenty-eight days.

"On July 25, 1949, he returned to light duty work and was assigned a desk job, as Utility Clerk, as recommended by the doctor.

"On Sunday, February 26, 1950, while at home, he re-injured his back and was placed in a back brace belt, with staves on either side of the spine.

"Since that time he has injured his back slightly on numerous occasions.

"On October 2, 1952, while attempting to arise from his desk he again felt a sharp pain in his lower back and was sent to the doctor. He was again treated, brace reapplied, and returned to duty for the remainder of the day.

"On the morning of October 3, 1952, he telephoned in that he did not feel able to return to work. He did return to work on October 6. October 4 and 5 (Saturday and Sunday) were scheduled days off.

"X-ray pictures revealed no evidence of any increased slipping of vertebra L-5 or S-1.

"We would like to know if this should be charged as a lost time accident and how any recurrence should be charged."

The committee decided that the incident on October 2, 1952, did not appear to be an injury arising out of and in the course of employment and should not be included in the rates. One of the members suggested that additional days lost because of recurring pain should be charged back to the injury of July 1949 unless the injured employee should perform some act or some other incident should occur which might be considered an aggravation of his pre-existing physical weakness.

•

Case 213

On December 16, a boiler room employee rose after eating lunch. Upon rising, his right knee failed and would support no weight. The knee subsequently snapped back into place. No First Aid report was made. There was one witness.

On December 19, the same thing happened. The employee had been eating lunch sitting on a stool with his feet propped up. His supervisor was called and, with the help of a third employee, assisted the injured employee to the gate-house. On the way to the gate-house, the injured employee's right toe hit a manhole cover and the knee snapped back to usefulness again with very little pain or swelling. He was taken to a doctor. Examination showed a loose cartilage and the doctor recommended as much rest as possible but no time off from work. The injured employee was told to report for re-examination December 23, if he came in town that day, or in case the knee became worse. He returned to work at 1:00 P.M. (December 19) and with no further trouble completed his regular shift, which ended at 2:30 P.M. He also worked his regular shift on December 20, 1952, without difficulty.

The injured employee was scheduled to work, next, starting at 11:00 P.M. December 24. He failed to report. Upon investigation he said that his knee failed again on the morning of December 24.

On December 26, he was taken to the doctor. Upon further examination the doctor stated that the cartilage was loose and had failed to return to its proper position. The employee was hospitalized and the doctor plans on an operation to remove the loose cartilage. The doctor believes that some permanent injury will result. In the doctor's opinion the damage to the cartilage was not due to a blow; such damage could happen almost any time to certain people, occasionally as a result of a twist of the knee.

The committee decided that the situation which had been presented did not constitute an industrial injury and this case should not be included in the rates. The committee pointed out that the report clearly indicated that there was nothing in this man's employment which had contributed to the injury or which might have subsequently aggravated it.

•

Case 214

A draftsman reported that, as he was leaning over the drafting table working at the top of the table, a sharp, sudden pain occurred in his right side. He reports that, due to the very sharp pain, he stopped work for four or five minutes. A few days later, he discovered there was a swelling in his side. He consulted the company physician and learned that he had a right inguinal hernia.

This situation seemed to satisfy the requirements for an industrial hernia except the company was uncertain as to whether the "leaning over the table, working at the top of the table" satisfied the requirement that a hernia should be precipitated by sudden or severe strain.

The committee decided that this injury should not be included in the rates on the basis that there was not a clear history of an accident and that the hernia was not precipitated by sudden effort or severe strain.

•

Case 215

A secretary employed in a Control Laboratory was washing a 400 ml beaker. It collapsed, severing a tendon in the right thumb — resulting in four days absence from work. This employee was washing the beaker during her lunch period with the intention of using it as a container for hot soup.

The committee decided that this injury should not be included in the rates on the basis that this employee was injured during her lunch hour while she was washing out a container for hot soup as part of her lunch.

•

Case 216

The committee made no decision in this case because of insufficient information.

•

Case 217

When this employee was hired, his physical examination indicated that he had 100 percent flexion disability in the third finger right hand. While at work he was involved in an accident in which this same finger was injured. As a result of the injury it was necessary to amputate the finger to the first joint. Only four days actual time was lost.

The company wanted to know the proper time charges for this injury.

The committee decided that this should be included in the rates as a permanent partial disability and that the time charges for this injury should be 150 days. The committee called attention to paragraph 3.3.1 of the standard which states in effect that the complete loss in one accident of any member or part of a member of the body shall be classified as permanent partial disability regardless of any pre-existing disability of the injured member.

•

Case 218

An employee who is employed as an electrician allegedly suffered a sprained ankle at 1:30 on a Saturday afternoon. He completed his shift, which ended at 4:30 P.M. On Monday the employee called the Plant Hospital and informed them he would not be in to work. Upon questioning, the nurse found out the reason why — because of soreness to his ankle. She suggested a doctor, but the employee told her he didn't need any and would be at work Tuesday morning. The nurse then informed the employee that she would pick him up in the Company car and take him to the doctor. She did this. After she had suggested two or three doctors, he chose one who was in the vicinity of where he had some shopping to do.

Upon examination, the doctor found a slight sprain and applied an ace bandage. He informed the man he should stay off his feet for two or three days. The man left the doctor's office, walked five blocks to where he did his shopping, completed his shopping, and walked home. The following day, Tuesday which was his pay day, the man walked from his home to where he received his pay. He then proceeded to the Electrical Shop to converse with his fellow workers, and then left for home, walking all this distance, approximately one and one-half miles, without any noticeable limp or discomfort.

After observing his actions, a supervisor immediately called the doctor who had attended him, explained the circumstances, and the doctor ordered the man back to work immediately.

The company did not believe that it should be charged with a lost time injury.

The committee finally decided that this case should be included in the rates as a temporary total disability with a total time charge of 2 days. The committee did not believe that it was in a position to rule as to whether or not the doctor's original opinion was right or wrong. The members believed however, that the fact that the doctor had reversed his opinion after the employee had already lost 2 days should not alter the fact that this employee had lost time from work as a result of the doctor's instructions.

•

Case 219

An employee was setting a feeder on a manufacturing unit. In order to reach this feeder, he had to stretch slightly, and in stretching he felt a pain in his groin. Later he did not recall that he had stopped work at all because of this pain, but he did mention it to one of his fellow employees, and about one hour and 45 minutes later he mentioned it to his foreman. The foreman sent him to the First Aid Station. The First Aid man could not find anything wrong with the employee, and he returned to work. Nine days later this employee noticed a lump in his groin which the doctors later diagnosed as a hernia. The company wished to know if this injury should be included in their rates.

The committee decided that this hernia should not be included in the rates on the basis that there had not been enough immediate pain to cause the employee to stop work and this injury did not meet requirements of paragraph 2.2(c) of the standard.

•

Case 220

A 51-year-old carpenter had been employed by the company for six years. As a child, this employee had suffered severe burns to the hands and both hands were malformed. The index finger of the left hand had been badly deformed and atrophied. There was no bone in this finger, and at the second joint it was distorted 90 degrees and without flexion or use. The employee had consulted his doctor several times about removing it, but the doctor had been reluctant to do this.

On the day in question, this carpenter had sharpened a circular saw and installed it on a tilt arbor saw table. In testing the saw, he had badly lacerated the left index finger and also lacerated his thumb. The atrophied and boneless finger appendage was removed at what would normally have been the second joint. The laceration of the thumb was sutured and the man returned to work so that no time was lost. The company wished to know if it was necessary to charge this as a permanent partial disability because of the loss of part of the left index finger. The company even provided a photograph of this employee's hands which further indicated the gross malformation of the fingers.

After considerable discussion, the committee decided that the amputation of this employee's deformed appendage should not be considered as a permanent partial disability case, and since this employee did not lose any time from work, it should not be included in the rates. This decision was partly based upon the fact that there was actually no bone involved in this amputation.

•

Case 221

An employee was walking, empty handed, from the carbide storage room to the repair room at the Acetylene Generating Station. The two rooms are separated and the cement walk leading from one to the other is seven inches lower than their floors. He stated he was walking in a normal manner and as he stepped down onto the walk with his right foot first, his right knee snapped but he experienced no pain until after he had taken additional steps. He did not fall. After treatment at the dispensary, he returned to work and completed his regular turn. On his return to the dispensary the following day further examination revealed a torn cartilage but no swelling. The Plant Doctor recommended an operation and arrangements were made for hospitalization.

On questioning, this employee stated that his knee had snapped once, about eight months before, while he was water skiing. The company wanted to know whether or not this should be considered as an industrial injury.

The committee decided that this injury should be included in the rates and the time charges should be the actual number of days lost by this employee. The committee commented that this case was very similar to Case No. 209. In both instances it appeared that the employees had pre-existing weak knees and in each instance the pre-existing weakness was aggravated by an action performed in the course of employment.

•

Case 222

At 7:40 A.M., Friday, a warehouse employee while attempting to close a railroad car door, received a slight bruise and abrasion on top of the distal joint of his right thumb. He immediately reported to the nurse on duty in the plant First Aid room. The nurse classified the injury as a minor bruise and abrasion, rendering proper care therefore and told the employee to report back for redressing at end of shift. This was done, and the injured man was requested to call the First Aid Department the next day if his thumb bothered him. (Saturday and Sunday were his regular days off.)

In accordance with instructions, the injured man called the First Aid Department at 10:00 A.M., Saturday, stating that his thumb was sore, slightly painful, but he thought it was all right. The nurse asked the injured man if he would drop by First Aid on his way to town; he agreed. When seen at 10:45 A.M., the wound showed marked swelling. The nurse asked him to report to the company Medical Director's clinic on his way into town. The man agreed to do so.

Fifteen minutes after his arrival at the clinic, two emergency cases were brought in. One hour later, the employee's patience at an end, he went on his way without seeing the doctor.

Sunday afternoon, his thumb became very painful. At 9:00 P.M., he allegedly attempted to contact his family physician. Repeated calls were allegedly attempted until midnight. (Company First Aid Department is staffed with registered nurses 24 hours per day, seven days per week, and have been for five years. This is common knowledge of all employees.) He made no attempt to call the company First Aid Department.

On Monday morning, he did not call in to report his condition or that he would not be in to work. He saw his family physician at 9:30 A.M. Family physician diagnosed the case as blood poison from infected wound. The attending physician placed employee in hospital where he remained for ten days.

The committee decided that this injury should be included in the rates as a temporary total disability. Some members commented that the fact that the employee received some first aid and then ignored further medical treatments provided by the company did not change the classification of the injury.

•

Case 223

A company wrote:

"A wood modelmaker was employed in the fabrication of laminated wooden propellers for a high speed wind tunnel. He had occasion to raise the tip end of a propeller, the total weight of which was about 250 pounds. As closely as we can estimate, the maximum lifting effort expanded by the man must have been less than 75 pounds. About five minutes later he noted a burning sensation in his groin, as though someone had placed a hot iron against him. He mentioned this to a fellow worker but did not stop work, even for a few minutes. As of this date, he has not lost any time due to the alleged injury.

"Fifteen days later, as the pain continued, the employee reported to the company dispensary. The alleged injury did not appear to require medical attention, but a written notice was made for the man's personnel records.

"Twenty-five days after the injury, as the pain continued, not acute but persistent, particularly late in the work-day, the man was referred to a physical who diagnosed an incomplete indirect inguinal hernia and recommended surgery."

The company wished to know if this hernia should be included in their rates.

The committee decided that this hernia should not be included in the rates on the basis that it did not meet the requirements of paragraph 2.2 of the standard.

•

Case 224

This was a hypothetical case. No decision was rendered. The committee commented that they would rather not make decisions on hypothetical cases, but if any actual cases developed of a similar nature, they would try to make a decision on each actual case as it developed.

•

WHAT IS YOUR QUESTION?

Have standards for high pressure hydraulic flanges been adopted in the United States and in Europe?

The recently approved new edition of the American Standard on Steel Pipe Flanges and Flanged Fittings, B16.1-1953, covers flanges that may be used under certain conditions for pressures up to 6000 pounds per square inch. A series of standards for high pressure flanges has also been published in Germany. These are designated as DIN 2579; 2550; 2551; 2628; 2629; 2668; and 2269.

Can you tell us where we can locate what was known as the "United States Standard Thread?" We are interested in the 27 threads per inch series?

The term "United States Standard Thread" has been used in the past (and still is being used by some) to indicate the standard series of threads originally developed by William Sellers in 1865. During the last 30 years, this has been modified somewhat and approved as American Standard. Most of these standard threads have also been worked out and agreed upon by the United Kingdom, Canada, and the United States, and are known as "Unified" threads. These standard threads are listed in the American Standard B1.1-1949, entitled "Unified and American Screw Threads." However, this standard does not list a series of 27 threads per inch. Such a series is found in the American Standard B2.1-1945, Pipe Threads.

Where can I get data on the industrial application of standard finishes on metallic surfaces as indicated by the symbol RMS $\sqrt[32]{}$?

Interpreting this question as a request for information concerning actual use by industry of the type of standard finishes indicated by this symbol, the reply (December 1953) asked for help in answering the question. Replies received indicate, however, that the question may have called, instead, for an interpretation of the symbol itself. This is, of course, one of the preferred standard roughness height values (in microinches) listed in the American Standard Surface Roughness, Waviness, and Lay, B46.1-1947. However, the letters "RMS" indicate that it is the root-mean-square average. The RMS values tend to stress the points farthest from the mean line. They are roughly equivalent to the average values but they can vary up to 25 percent on surfaces. The correct way to express the roughness height value, according to the American Standard, is $\sqrt[32]{}$. A description of the industrial applications of standard finishes was published in a feature announcing the new American Standard Physical Specimens of Surface Roughness, Waviness and Lay (STANDARDIZATION, August 1952). This also discussed American Standard B46.1-1947. On the symbol indicated in this question, the industrial application is described as follows:

"This surface corresponds to a fine machine finish, a rough commercial carbide or diamond bore, a medium surface grind, a coarse cylindrical grind, reaming, and similar operations. In the case of turned parts, this finish may be produced by subsequent hand work with emery cloth. In using this finish and finer ones, careful consideration should be given to increased shop costs. It may be used on parts subjects to stress concentration and vibration. While difficult to produce on a lathe, mill or by other direct machining operations, it is relatively easy to produce as centerless, cylindrical or surface grind and is the most suitable finish for hardened steel parts. It may be used for bearings where accuracy is essential, motion is continuous, and loads are light, particularly if the lay is in the direction of motion."

Those interested in this subject may want to refer to the discussion on "Typical Drafting Conventions for Surface Finish" published in *Design News*, November 1950.

A reprint of the feature on surface finish, "How to Check Quality of Surface Finish" (STDZN, August 1952) is available from the American Standards Association (50 cents).

Standards From Other Countries

*Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.*

658 LEATHER WORK. ACCOUTREMENTS. TRAVEL, SPORTS AND RECREATION REQUISITES

Japan (JISC)

Watertight luncheon container, small type — JIS Z 5410

Mexico (DGN)

Grease for footwear — DGN R-24

South Africa (SABS)

Standard specification for hospital nurses' shoes (Goodyear welted) — SABS 422-1952

Standard specification for maids' and girls' school shoes (laced or bar types) machine sewn and stitched or Goodyear welted — SABS 425/426-1952

United Kingdom (BSI)

Children's outdoor footwear (materials and workmanship) — BS 2025:1953

Gymnasium equipment — BS 1892:1952

677 TEXTILE INDUSTRY

Belgium (NBN)

Length of fibres: frequency expressed in number of fibres — NBN 302

Length of fibres: frequency expressed in weight of fibres — NBN 303

France (AFNOR)

Hemp, Manila and sisal cords — NF G 36-003

Hemp, Manila and sisal cords — NF G 36-005

Germany (DNA)

Woven and knitted goods: standard sizes for women — DIN 61524

7 standards for different tex-tile manufacturing processes — DIN 61703, 64015, 64054/6, 64118, 6409

India (ISI)

Determination of mean fibre weight of cotton per unit length — I.S. 234

Determination of twist in cotton yarn — I.S. 238

Handloom carpets (Mirzapur) for export — I.S. 433

Japan (JISC)

Testing method of Jute yarn — JIS L 1014

Testing method of jute fabrics — JIS L 1016

Rules for inspection of embroidery lace for export — JIS L 1618/9

Standard dimensions for mosquito-net — JIS Z 7988

14 standards for different details of textile machinery — JIS L 1704/5, 1707, L 1801, 3406/11, L 5139, 5147/8, L 6414

Netherlands (HCNN)

Denomination of parts of weaving looms — N 1052

Poland (PKN)

45 standards in the field of textile industry — Section P Series 01700

9 standards for different yarns — PN P-81 . . .

11 standards for different types of fabrics — PN P-82 . . .

5 standards for textile machine parts — PN P-62836, -63801, -63802, -63804, -67209

U.S.S.R.

Backing cotton fabric for emery and similar polishing cloth — GOST 3357

Cotton threads — GOST 6309

Spindle tape — GOST 6332

United Kingdom (BSI)

Moisture in textile materials — BS 1051:1953

Determination of yarn count or yarn number — BS 2010:1953

Glossary of terms applicable to fillings and stuffings — BS 2005:1953

Glossary of terms: woven apparel fabrics containing wool — BS 2020:1953

Weights per unit length of textile fibers — BS 2016:1953

Finishing properties of woven rayon apparel fabrics — BS 2022/24:1953

Plaited cords — BS 2018:1953

Lines made from cotton and hemp — BS 2019:1953

Tickings for domestic bedding — BS 2036:1953

Determination of wool fibre fineness — BS 2043:1953

677.6 TEXTILE PRODUCTS OF SPECIAL FORM

Argentina (IRAM)

7 standards for steel wire ropes — IRAM 518, 547/8, 622/5

678 RUBBER INDUSTRY

Czechoslovakia (CSN)

10 standards for rubber hoses, etc. — CSN 63 5300/1, -3030, -3301, -5030, -5300/4, -5359/60

Erasers for use in school — CSN 90 1410

France (AFNOR)

Method of preparation of vulcanized rubber test pieces — NF T 43-001

Determination of consistivity index of raw rubber — NF T 43-005

Japan (JISC)

Rubber hoses for different purposes (9 standards) — JIS K 6330/8*

Erasers for pencils — JIS Z 6604*

Mexico (DGN)

Rubber air hoses — DGN R-23

United Kingdom (BSI)

Electricians' rubber gloves — BS 697:1953

Rubber footwear — BS 1934:1953

Molded rubber hot water bottles for hospital use — BS 1970:1953

Polythene tube for cold water services — BS 1972:1953

Polythene tube for general purposes including chemical and food industry uses — BS 1973:1953

Methods of testing raw rubber and unvulcanized compounded rubber: Part 4: Evaluation of vulcanizing characteristics — BS 1673: Part 4: 1953

679.5 PLASTICS INDUSTRY

Germany (DNA)

Press boards, press fabric plastic bonded — DIN 40607

Japan (JISC)

Celluloid stocks for export — JIS K 6702

Poland (PKN)

Different mechanical tests — PN C-89025/7, -89029

681 FINE MECHANISMS. CLOCKS AND WATCHES. MUSICAL INSTRUMENTS

Germany (DNA)

3 types of pressure gages — DIN 16024/5, -16040

Japan (JISC)

Dial type gage graduated 1-100 mm — JIS B 7503

Micrometer head (1/100 mm calibrated) — JIS B 7504

United Kingdom (BSI)

Weighing and height-measuring machines for use in maternity and child welfare and school health services — BS 1987:1953

Measurement of frequency variation in sound recording and reproduction — BS 1988:1953

Dimensional features of measuring and control instruments and panels for industrial processes — BS 1986:1953

683 HARDWARE

France (AFNOR)

2 standards for industrial hinges — NF P 26-306, NF P 26-406

Israel (SII)

4 standards for different hinges — S.I. 91/94

United Kingdom (BSI)

Kerosine (paraffin) appliances for domestic use: Part 1: Burners, portable space heaters, cooking and boiling appliances — BS 2049: Part 1: 1953

686.8 SCHOOL NECESSITIES

New Zealand (NZSI)

Standard specifications for school requisites. Part 1: School Rulers — NZSS 660-Part 1, Oct. 1950

696/698 EQUIPMENT. SERVICES

Austria (ONA)

Specifications for painting of buildings — ÖNORM B 2230

696/698 (continued)

Czechoslovakia (CSN)

Central heating and ventilating system, general	CSN 06 0310

Germany (DNA)

Portable ceramic slow-burning stoves	DIN 18891
Household stoves	DIN 18887, 18893

Poland (PKN)

3 standards for central heating system	PN B-02413/4, -03406

699.8 PROTECTIVE CONSTRUCTIONS

Israel (SII)

6 standards for different type underground and overground shelter constructions	SI 64, -71, -73, -76, -82, -83

United Kingdom (BSI)

Fire tests on building materials and structures	BS 476:1953

725 CIVIL AND INDUSTRIAL ARCHITECTURE

Poland (PKN)

3 types of slaughter houses. General regulations	PN A-05001/3

744 TECHNICAL DRAWINGS

Netherlands (HCNN)

Drawings with regard to the situation of traffic accidents and criminal actions for the use of judicial inquiry	N 1066

Switzerland (SNV)

6 standards relative to drawings and drafting room practice	VSM 10308, -10311, -10315, -10324, -10365/66

Government Policy on Standards

A new policy established by the General Services Administration specifically calls for participation by technical societies and trade associations in the development of Federal Specifications and standards. The policy is outlined in Administrative Order No. 153 issued December 18, 1953.

The Administration reports that the regulation was issued following consultation with the Department of Justice, which some time ago promulgated criteria for the guidance of Federal agencies using industry advisory committees.

The policy set forth in the new order specifically refers to the formation of technical committees to advise on technical problems in drafting specifications and standards. It is the policy, according to the order to assure "to all persons and concerns having a legitimate interest, fair representation in the development of specifications and standards," and to preclude "action that might adversely affect such persons or concerns . . ."

The order analyzes the need for industry and technical society help as follows:

"In the development of Federal specifications and standards, Government agencies, including the General Services Administration, have for many years sought and obtained the cooperation and assistance of technical societies, trade associations, industrial and business concerns, and other sources having personnel with requisite technical training and experience. Without such cooperation and assistance, the development of specifications and standards could have been achieved in many cases, if at all, only by the most costly and unwarranted duplication of facilities and personnel by the Federal Government. These organizations frequently maintain development and research facilities financed by the particular industry as a whole or major segments thereof. Information from these organizations has been obtained in some cases by direct inquiry of and discussion with representatives or officials thereof and in other cases by the formation of a technical group or committee in which the representatives or officials of these organizations participate."

"It is the policy of GSA," the order declares, "to continue to carry out assigned functions and responsibilities relating to specifications and standards by utilization of these facilities and sources of information and to continue to seek their cooperation in these matters of common interest."

The Standards Engineers Society

Three Chapters of the Standards Engineers Society are now active. The Metropolitan Philadelphia Section, organized March 30, 1953; the Metropolitan New York Section April 27, 1953; and the Southern Tier (N. Y.) Section June 5, 1953.

Programs of all three sections concentrate on problems of special interest to individuals directly concerned with the administration of standards activities. Recent programs of the New York section have presented discussions on drawing and drafting practice by W. L. Healy, General Electric; on the significance of the American Standards Association, by Cyril Ainsworth, ASA; and on standardization of color in industry by W. J. Kiernan, Bell Telephone Laboratories.

The Philadelphia Chapter heard a discussion at its last meeting of the Armed Services Electro-Standards Agency and its activities by Colonel Glenn S. Meader, ASESA Director. The Section is planning to try out a different type of program at one of its future meetings. In place of a regular speaker, a standardization problem will be selected and two or three designated individuals will give their solutions. The program chairman will act as a moderator for a general discussion open to all present.

The Southern Tier Section with headquarters at Binghamton is holding forum-type meetings, giving its members an opportunity to participate in the discussion. It has had discussions on the evaluation of standards with V. S. Ward of IBM Corporation as moderator, a report on the Company Member Conference, and on the basic approach to developing an industrial standard.

H. G. Arlt, Bell Telephone Laboratories, is chairman of the New York Section; V. T. Gittens, Philco Corporation, Philadelphia, is chairman of the Philadelphia Section; and W. G. Baird, International Business Machines Corporation, of the Southern Tier Section.

Officers of the national Society have been re-elected for the coming year. They are W. L. Healy, General Electric Company, Philadelphia, president; M. S. Gokhale, Victor Division, RCA Corporation, Camden, vice-president; F. M. Oberlander, RCA Victor Division, Camden, N. J., secretary; and H. J. Nugent, Manufacturers' Representative, Philadelphia, treasurer.

AMERICAN STANDARDS

Status as of January 12, 1954

Legend

Standards Council — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review — Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Standards Boards — Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Building

American Standards Approved —

Method of Sampling Magnesium Oxychloride Compositions and Ingredients, ASTM C 237-51; ASA A88.10-1953

Method of Test for Sieve Analysis of Magnesium Oxychloride Compositions, Aggregates and Fillers, ASTM C 238-51; ASA A88.11-1953

Method of Test for Sieve Analysis of Plastic Calcined Magnesia, ASTM C 239-51; ASA A88.12-1953

Methods for Chemical Analysis of Magnesium Sulfate, Technical Grade, ASTM C 244-52; ASA A88.13-1953

Methods for Chemical Analysis of Magnesium Chloride, ASTM C 245-52; ASA A88.14-1953

Methods for Physical Testing of Magnesia for Magnesium Oxychloride Cements, ASTM C 246-52; ASA A88.15-1953

Methods of Test for Ignition Loss and Active Calcium Oxide in Magnesium Oxide for Use in Magnesium Oxychloride Cements, ASTM C 247-52; ASA A88.16-1953

Method of Test for Bulk Density of Magnesium Oxychloride Cements, ASTM C 248-52; ASA A88.17-1953

Method of Slump Test for Field Consistency of Magnesium Oxychloride Cements, ASTM C 249-52; ASA A88.18-1953

Specifications and Method for Field Determination of Specific Gravity of Gauging Solutions for Magnesium Oxychloride Cements, ASTM C 250-52; ASA A88.19-1953.

Method for Mixing Magnesium Oxychloride Cement Compositions with Gauging Solution (for Preparation of Specimens for Laboratory Tests), ASTM C 251-52; ASA A88.20-1953

Method of Test for Linear Contraction of Magnesium Oxychloride Cements, ASTM C 252-52; ASA A88.21-1953

Method of Test for Linear Change of Magnesium Oxychloride Cements, ASTM C 253-52; ASA A88.22-1953

Method of Test for Setting Time of Magnesium Oxychloride Cements, ASTM C 254-52; ASA A88.23-1953

Method of Test for Consistency of Magnesium Oxychloride Cements by the Flow Table, ASTM C 255-52; ASA A88.24-1953

Method of Test for Flexural Strength of Magnesium Oxychloride Cements (Using Simple Bar with Two-Point or Single-Point Loading), ASTM C 256-52; ASA A88.25-1953

Method of Test for Compressive Strength of Magnesium Oxychloride Cements, ASTM C 257-52; ASA A88.26-1953
Sponsors: American Society for Testing Materials; National Bureau of Standards

In Construction Standards Board —

Method of Test for Time of Setting of Hydraulic Cement by Gillmore Needle, ASTM C 266-51T; ASA A1.17

Specifications for Masonry Cement, ASTM C 91-53; ASA A1.3

Specifications for Portland Cement, ASTM C 150-53; ASA A1.1

Specifications for Air-Entraining Portland Cement, ASTM C 175-53; ASA A1.16

Methods of Test for Compressive Strength of Hydraulic Cement Mortars, ASTM C 109-52; ASA A1.4

Methods of Test for Chemical Analysis of Portland Cement, ASTM C 114-53; ASA A1.5

Methods of Test for Fineness of Portland Cement by Turbidimeter, ASTM C 115-53; ASA A1.7

Methods of Test Autoclave Expansion of Portland Cement, ASTM C 151-53; ASA A1.8

Methods of Test for Air Content of Portland Cement Mortar, ASTM C 185-53T; ASA A1.9

Methods of Test for Heat of Hydration of Portland Cement, ASTM C 186-53; ASA A1.10

Methods of Test for Time of Setting of Hydraulic Cement by Vicat Needle, ASTM C 191-52; ASA A1.15

Specifications for Inorganic Aggregates for Use in Interior Plaster, ASTM C 35-53T; ASA A107.1

Specifications for Standard Strength Perforated Clay Pipe, ASTM C 211-50; ASA A106.1

Specifications for Gypsum Partition Tile or Block, ASTM C 52-41; ASA A105.1

Specifications for Drain Tile, ASTM C 4-50T; ASA A6.1 (Revision of ASTM C 4-24; ASA A6-1925)

Specifications for Sewer Brick (Made from Clay or Shale), ASTM C 32-50; ASA A100.1

Specifications for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units, ASTM C 126-52T; ASA A101.1

Specifications for Vitrified Filter Block for Trickling Filters, ASTM C 159-51; ASA A102.1

Specifications for Chemical-Resistant Masonry Units, ASTM C 279-52T; ASA A103.1

Definitions of Terms Relating to Structural Clay Tile, ASTM C 43-50; ASA A104.1

Specifications for Granite Block for Pavement, ASTM D 59-53; ASA A37.35

Method of Test for Bitumen, ASTM D 4-52; ASA A37.3

Method of Test for Penetration of Bituminous Materials, ASTM D 5-52; ASA A37.1

Method of Test for Abrasion of Coarse Aggregate by Use of the Los Angeles Machine, ASTM C 131-51; ASA A37.7

Method of Test for Distillation of Tars and Tar Products, ASTM D 20-52; ASA A37.9

Method of Test for Slump of Portland-Cement Concrete, ASTM C 143-52; ASA A37.29

Method of Sampling Fresh Concrete, ASTM C 172-52T; ASA A37.30

Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method, ASTM C 231-52T; ASA A37.70

Method of Test for Specific Gravity of Road Oils, Road Tars, Asphalt Cements, and Soft Tar Pitches, ASTM D 70-52; ASA A37.71

Method of Test for Specific Gravity of Asphalts and Tar Pitches Sufficiently Solid to be Handled in Fragments, ASTM D 71-52; ASA A37.72

Definitions of Terms Relating to Materials for Roads and Pavements, ASTM D 8-52; ASA A37.33
Sponsor: American Society for Testing Materials

Methods of Fire Test of Building Construction and Materials, A2
Sponsors: American Society for Testing Materials; National Fire Protection Association; United States Department of Commerce, National Bureau of Standards

Drawings and Symbols

American Standard Approved —

Letter Symbols for Acoustics, Y10.11-1953
Sponsor: American Society of Mechanical Engineers

Electrical

American Standards Published —

Grounding-Type Attachment Plug Caps and Receptacles and 3-Wire 30-Ampere 250-Volt Cap and Receptacle, C73a-1953 (Revision of C73a-1950 and C73b-1951; Supplement to and partial revision of C73-1941) $0.50
Sponsor: National Electrical Manufacturers Association

Measurement of Voltage in Dielectric Tests, AIEE No. 4; ASA C68.1-1953 (Revision of C68.1-1942) $0.80
Sponsor: American Institute of Electrical Engineers

American Standards Approved —

Transformers, 67,000 Volts and Below, 501 through 10,000 Kva, 3 Phase; 501 through 5,000 Kva, 1 Phase, C57.12a-1954
This standard is supplementary to American Standard for Distribution, Power, and Regulating Transformers, and Reactors other than Current-Limiting Reactors, C57.12-1949. This supplement covers electrical characteristics and mechanical features of 60-cycle, 2-winding, mineral-oil-

filled transformers rated as indicated in the title, and generally used for step-down purposes.

Specifications for Class AO 30 Percent Hevea Rubber Compound for Insulated Wire and Cable, ASTM D 27-52T; ASA C8.17-1954 (Revision of C8.17-1936)
Covers the conductors, insulation, cable tape, cotton braid, and lead sheathes of Class AO rubber insulated wire and cable.

Methods of Testing Rubber Insulated Wire and Cable, ASTM D 470-52T; ASA C8.22-1954
Describes procedures for the testing of rubber-insulated wire and cable. To determine the tests to be made on a particular wire or cable, reference should be made to the specifications for that type.

Specifications for Performance Synthetic Rubber Compound for Insulated Wire and Cable, ASTM D 755-52T; ASA C8.23-1954
Covers wire and cable insulated with a vulcanized compound, the rubber hydrocarbon content of which shall consist substantially of synthetic rubber. This standard is intended to permit the use of the compound known as "Government Rubber," type GR-S, but is not restricted to this type.

Specifications for Heat-Resisting Synthetic Rubber Compound for Insulated Wire and Cable, ASTM D 754-52T; ASA C8.24-1954
Covers wire and cable insulated with a vulcanized compound, the rubber hydrocarbon of which shall consist substantially of synthetic rubber. This standard is intended to permit the use of the compound known as "Government Rubber," type GR-S, but is not restricted to this type. This compound is a heat-resisting type and is ordinarily considered suitable for use at conductor temperatures not in excess of 167 F (75 C).

Specifications for Rubber Sheath Compound for Electrical Insulated Cords and Cables, ASTM D 532-49; ASA C8.25-1954
Covers a durable, vulcanized rubber compound suitable for use as the outside covering or sheath on insulated electrical cords and cables.

Specifications for Performance Rubber Compound for Insulated Wire and Cable, ASTM D 353-52T; ASA C8.26-1954
Covers wire and cable insulated with a vulcanized natural rubber compound.

Specifications for Heat-Resisting Rubber Compound for Insulated Wire and Cable, ASTM D 469-52T; ASA C8.27-1954
Covers wire and cable insulated with a vulcanized natural rubber compound called heat-resisting rubber compound. This compound is ordinarily recommended for use at conductor temperatures not in excess of 75 C.

Specifications for GR-S Synthetic Rubber Sheath Compound for Electrical Insulated Cords and Cables, ASTM D 866-46T; ASA C8.28-1954
Covers a durable, vulcanized synthetic rubber compound, type GR-S, suitable for use as the outside covering or sheath on insulated electrical cords and cables.

Specifications for Ozone-Resistant-Type Insulation for Insulated Wire and Cable, ASTM D 574-46T; ASA C8.29-1954
Covers wire and cable insulated with a vulcanized rubber or rubber-line compound known commercially as ozone-resistant type insulation.

Specification for Polyvinyl Insulating Compound for Insulated Wire and Cable, ASTM D 734-50T; ASA C8.30-1954
Covers wire and cable insulated with a thermaplastic synthetic insulating compound made from polyvinyl chloride or its copolymer with vinyl acetate.

Specifications for GR-M Polychloroprene Sheath Compound for Electrical Insulated Cords and Cables where Extreme Abrasion Resistance Is Not Required, ASTM D 753-49; ASA C8.31-1954
Covers a durable, vulcanized, GR-M polychloroprene compound suitable for use as the outside covering or sheath on insulated electrical cords and cables where extreme abrasion resistance is not required at temperatures not lower than —25 C.

Specifications for GR-M Polychloroprene Sheath Compound for Electrical Insulated Cords and Cables, ASTM D 752-49T; ASA C8.32-1954
Covers a durable, vulcanized GR-M polychloroprene compound suitable for use as the outside covering or sheath on insulated electrical cords and cables for heavy duty service at temperatures not lower than —25 C.

Specifications for Thermoplastic Vinyl Polymer Sheath Compound for Electrical Insulated Cords and Cables, ASTM D 1047-49T; ASA C8.33-1954
Covers a thermoplastic synthetic jacketing compound, for cords and cables, not less than 1/32 in. in thickness made from polyvinyl chloride or its copolymer with vinyl acetate.

Specifications for Weather-Resistant Wire and Cable, Neoprene Type, C8.34-1954
Covers neoprene-type weather-resistant wire and cable, the conductors, the materials used for the neoprene coverings, and the acceptance requirements.

A-C Power Circuit Breakers, C37.4-1953 (Revision of C37.4-1945)
Contains service conditions, definitions, ratings, temperature limitations, and dielectric tests which apply to all indoor and outdoor types of alternating-current power circuit breakers rated in excess of 1500 volts.

Method for Determining the RMS Value of a Sinusoidal Current Wave and a Normal-Frequency Recovery Voltage, and for Simplified Calculation of Fault Currents, C37.5-1953 (Revision of C37.5-1945)
Covers, in detail, the methods in general use by industry for determining the values of the parameters listed in the title of the standard.

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6-1953 (Revision of C37.6-1949)
Lists preferred ratings for indoor oil, indoor oilless, and outdoor power circuit breakers. These ratings were prepared by the Edison Electric Institute—Association of Edison Illuminating Companies—National Electrical Manufacturing Association Joint Committee on Power Circuit Breakers.

Test Code for Power Circuit Breakers, C 37.9-1953 (Revision of C 37.9-1945)
Summarizes the various tests which may be made on power circuit breakers and describes accepted methods used in making these tests. The tests include both design and production tests.
Sponsor: Electrical Standards Board

In Board of Review —

Methods of Testing Molded Material Used for Electrical Insulation, ASTM D 48-52T; ASA C59.1 (Revision of C59.1-1947)

Methods of Test for Electrical Resistance of Insulating Materials, ASTM D 257-52T; ASA C59.3 (Revision of C59.3-1952)

Methods of Testing Laminated Tubes Used for Electrical Insulation, ASTM D 348-52; ASA C59.14 (Revision of C59.14-1948)

Methods of Testing Laminated Round Rods Used for Electrical Insulation, ASTM D 349-52; ASA C59.15 (Revision of C59.15-1948)

Specifications for Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, ASTM D 748-52T; ASA C59.26 (Revision of C59.26-1951)

Method of Testing Shellac Used for Electrical Insulation, ASTM D 411-52; ASA C59.18 (Revision of C59.18-1945)
Sponsor: American Society for Testing Materials

American Standards Reaffirmed —

Methods of Testing Molding Powders Used in Manufacturing Molded Electrical Insulators, ASTM D 392-38; ASA C59.10-1941 R1945 R1953

Methods of Test for Impact Resistance of Plastics and Electrical Insulating Materials, ASTM D 256-47T; ASA C59.11-1948 R1953
Sponsor: American Society for Testing Materials

In Electrical Standards Board —

Guide for Preferred Voltage Ratings for A-C Systems and Equipment, EEI R-6; NEMA 117, C84.1
Sponsors: Edison Electric Institute; National Electrical Manufacturers Association

Gas Burning Appliances

American Standards Published —

Approval Requirements for Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21 13.4-1953 (Revision of Z21.13.4-1951) $2.00

Approval Requirements for Domestic Gas Clothes Dryers, Z21.5-1953 (Revision of Z21.5-1940) $2.00

Approval Requirements for Gas Water Heaters, Z21.10-1953 (Revision of Z21.10-1950; Z21.10a-1951 and Z21.10b-1952) $2.00

Approval Requirements for Gas Unit Heaters, Z21.16a-1953 (Addenda to Z21.16-1951) $0.25

Approval Requirements for Gas-Fired Room Heaters, Z21.11b-1953 (Addenda to Z21.11-1949; Z21.11a-1950) $0.25

Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6a-1953 (Addenda to Z21.6-1949) $0.25

Approval Requirements for Domestic Gas Ranges, Z21.1a-1953 (Addenda to Z21.1-1952) $0.25
Sponsor: American Gas Association, Incorporated

Mechanical

American Standard Approved —

Chucks and Chuck Jaws, B5.8-1953 (Revision of B5.8-1936)
Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

In Mechanical Standards Board —

One-Quart Round Motor Oil Cans, B64.1

Rotating Air Cylinders and Adapters, B5.5 (Revision of B5.5-1932 R1949)
Sponsors: American Society for Testing Materials; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Miscellaneous

In Miscellaneous Standards Board —

Specifications for Thermometers, ASTM E1-53; ASA Z71.1
Sponsor: American Society for Testing Materials

Motion Pictures

American Standards Published —

Specifications for Multi-Frequency Test Film For Field Testing 16-Mm Sound Motion Picture Projection Equipment, PH22.44-1953 (Revision of Z22.44-1946) $0.25

Specifications for 3000-Cycle Flutter Test Film for 16-Mm Sound Motion Picture Projectors, PH22.43-1953 (Revision of Z22.43-1946) $0.25
Sponsor: Photographic Standards Board

American Standards Approved —

Dimensions for 16-Mm Film Perforated One Edge, PH22.12-1953 (Revision of Z22.12-1947)

8-Mm Motion Picture Film Usage in Camera, PH22.21-1953 (Revision of Z22.21-1946)

8-Mm Motion Picture Film Usage in Projector, PH22.22-1953 (Revision of Z22.22-1947)

Dimensions for 16-Mm Film Perforated Two Edges, PH22.5-1953 (Revision of Z22.5-1947)

A and B Windings of 16-Mm Film Perforated One Edge, PH22.75-1953

Aperture Calibration of Motion Picture Lenses, PH22.90-1953

Dimensions for 35-Mm Motion Picture Short-Pitch Negative Film, PH22.93-1953
Sponsor: Society of Motion Pictures and Television Engineers

Paints and Varnishes

Standards Submitted —

Method of Test for Acetone Extract in Black Pigments, ASTM D 305-51; ASA K55 (Revision of ASTM D 305-31; ASA K55-1941)

Specifications for Pure Para Red Toner, Light, ASTM D 475-49; ASA K49 (Revision of ASTM D 475-41; ASA K49-1941)

Methods of Chemical Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate, and Chromium Oxide Green, ASTM D 126-50T; ASA K58 (Revision of Methods of Chemical Analysis of Yellow and Orange Pigments Containing Chromium Compounds, Blue Pigments, and Chrome Green, ASTM D 126-36; ASA K58-1941)
Submitted by: American Society for Testing Materials

Petroleum Products and Lubricants

American Standards Approved —

Test for Foaming Characteristics of Crankcase Oils, ASTM D 892-46T; Z11.78-1953

Test for Butadiene Dimer in Polymerization Grade Butadiene, ASTM D 1024-53; ASA Z11.79-1953

Test for Boiling Point Range of Polymerization Grade Butadiene, ASTM D 1088-53; ASA Z11.80-1953

Test for Carbonyl Content of Butadiene, ASTM D 1089-53; ASA Z11.81-1953

Test for Water Tolerance of Aircraft Fuels, ASTM D 1094-53; ASA Z11.82-1953

ASTM-IP Petroleum Measurement Tables, ASTM D 1250-53; ASA Z11.83-1953

Test for Distillation of Gasoline, Naphtha, Kerosene and Similar Petroleum Products, ASTM D 86-53; ASA Z11.10

Test for Viscosity by Means of the Saybolt Viscosimeter, ASTM D 88-53; ASA Z11.2-1953

Test for Color of Refined Petroleum Oil by Means of Saybolt Chromometer, ASTM D 156-53T; ASA Z11.35-1953

Test for Distillation of Gas Oil and Similar Distillate Fuel Oils, ASTM D 158-53; ASA Z11.26-1953

Test for Distillation of Natural Gasoline, ASTM D 216-53; ASA Z11.11-1953

Definitions of Terms Relating to Petroleum, ASTM D 288-53; ASA Z11.28-1953

Test for Knock Characteristics of Motor Fuels by the Motor Method, ASTM D 375-53; ASA Z11.37-1953

Test for Existent Gum in Fuels by Jet Evaporation, ASTM D 381-52T; ASA Z11.36-1953

Method for Conversion of Kinematic Viscosity to Saybolt Universal Viscosity, ASTM D 446-53; ASA Z11.46-1953

Test for Tetraethyllead in Gasoline, ASTM D 526-53T; ASA Z11.48-1953

Method for Calculating Viscosity Index, ASTM D 567-53; ASA Z11.45-1953

Test for Oil Content of Paraffin Wax, ASTM D 721-53T; ASA Z11.52-1953

Method for Conversion of Kinematic Viscosity to Saybolt Furol Viscosity, ASTM D 666-53; ASA Z11.53-1953

Test for Knock Characteristics of Motor Fuels by the Research Method, ASTM D 908-53; ASA Z11.69-1953
Sponsor: American Society for Testing Materials

American Standards Reaffirmed —

Test for Melting Point of Paraffin Wax, ASTM D 87-42; ASA Z11.4-1942 R1947 R1953

Test for Cloud and Pour Points, ASTM D 97-47; ASA Z11.5-1948 R1953

Test for Water in Petroleum Products and Other Bituminous Materials, ASTM D 95-46; ASA Z11.9-1947 R1953

Methods of Analysis of Grease, ASTM D 128-47; ASA Z11.16-1948 R1953

Test for Burning Quality of Mineral Seal Oil, ASTM D 239-30; ASA Z11.18-1930 R1947 R1953

Test for Burning Quality of Long-Time Burning Oil for Railway Use, ASTM D 219-36; ASA Z11.19-1936 R1947 R1953

Test for Autogenous Ignition Temperatures of Petroleum Products, ASTM D 286-30; ASA Z11.23-1932 R1947 R1953

Test for Dilution of Crankcase Oils, ASTM D 322-35; ASA Z11-29-1935 R1947 R1953

Viscosity-Temperature Charts for Liquid Petroleum Products, ASTM D 341-43; ASA Z11.39-1943 R1947 R1953

Test for Ash Content of Petroleum Oils, ASTM D 482-46; ASA Z11.54-1947 R1953
Sponsor: American Society for Testing Materials

American Standard Withdrawn —

Abridged Volume Correction Table for Petroleum Oils, ASTM D 206-36; ASA Z11.1-1936
Sponsor: American Society for Testing Materials

Photography

American Standards Approved —

Designation for Thickness of Photographic Paper, PH1.1-1953 (Revision of Z38.1.44-1944)

Dimensions for Molded-Type Cores for Photographic Film and Paper Rolls, PH1.13-1953 (Revision of Z38.1.48-1947)

Dimensions for 35-Mm Film Magazines for Still Picture Cameras, PH1.14-1953 (Revision of Z38.1.47-1946)

Dimensions for Industrial X-ray Sheet Film (Inch Sizes), PH1.15-1953 (Revision of Z38.1.25-1947)

Dimensions for Graphic Arts Sheet Film (Inch Sizes), PH1.16-1953 (Revision of Z38.1.26-1947)

Dimensions for Medical X-ray Sheet Film (Inch and Centimeter Sizes), PH1.17-1953 (Revision of Z38.1.27-1947)

Dimensions for Professional Portrait and Commercial Sheet Film (Inch Sizes), PH1.18-1953 (Revision of Z38.1.28-1947)
Sponsor: Photographic Standards Board

In Photographic Standards Board —

Method for Determining Photographic Speed and Exposure Index, PH2.5 (Revision of Z38.2.1-1947)
Sponsor: Photographic Standards Board

Pipes and Fittings

American Standard Published —

Steel Pipe Flanges and Flanged Fittings, B16.5-1953 $3.00
Sponsors: American Society of Mechanical Engineers; Heating, Piping and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

Safety

American Standard Approved —

Safety Code for Mechanical Refrigeration, B9.1-1953 (Revision of B9.1-1950)
Sponsor: American Society of Mechanical Refrigerating Engineers

What's New on American Standard Projects

Drawings and Drafting Practice, Y14—
Sponsor: American Society of Mechanical Engineers; American Society of Engineering Education

Seventeen sections of the proposed American Standard on Drawings and Drafting Practice will be published as separate documents, and it is hoped that the first five will be published this year. This was the report presented by R. P. Hoelscher, Chairman of Sectional Committee Y14, to the Company Member Conference during the National Standardization Conference in October 1953.

Extensive work is being done by subcommittees in preparing these 17 individual sections, Professor Hoelscher said. He reported on the work of each subcommittee:

No. 1. SIZE AND FORMAT. The most significant change from the 1946 standard is the inclusion of the 9 x 12 basic size as well as the 8½ x 11. The report covers the location of title blocks, revision lists, parts lists, zoning, and folding. Discussion of this report is closed.

No. 2. LINE CONVENTIONS, SECTIONING AND LETTERING. The report shows weight of lines for both pencil and ink work. Two types of cutting plane lines are approved as well as the use of either a center line or solid line in separating the two parts of a half sectioned drawing. Discussion on this report has been closed.

No. 3. PROJECTIONS. This report differs little from the 1946 report. The following items have been added: — a simple intersection, an illustration of a flat pattern layout, and illustrations of the fundamental operations of descriptive geometry. Discussion closed on December 21, 1953.

No. 4. PICTORIAL DRAWING. This section is entirely new. It defines and illustrates the various types of pictorial drawing, including sectional views, dimensioning, shading, and exploded views. Discussion closed.

No. 5. DIMENSIONS AND NOTES. This report, which is the most important section of the work, was delayed for one year by a chairman who did not function and had to be replaced. The first draft of this report was received by the Executive Committee on October 6, 1953. The present chairman and his committee have done an excellent job. The report will be circulated to industry for comment in the spring of 1954.

No. 6. SCREW THREAD REPRESENTATION. The section goes much farther into the discussion of the disposition of tolerances, allowances, and crest clearances for the various classes of Unified and American Standard threads than the old standard. At the present time it does not include square and acme threads. They will be included in a later edition. Discussion closed on December 21, 1953.

No. 7. GEARS, SPLINES, AND SERRATIONS. This section is likewise greatly expanded over the 1946 edition. It includes bevel and worm gears as well as spur gears and shows minimum dimensions which must be given for any gear as well as those needed when close tolerances are required. Discussion closed on October 30, 1953.

The foregoing sections, as well as section No. 13, were all covered to some degree in 1946 standards. The following sections, with the exception of No. 13 on Springs, are entirely new and represent an effort to give more complete coverage of good drafting practice as suggested in the summary of the Company Member Conference findings. By their nature these sections border in some respects on empirical design and require some explanatory material. An effort has been made to hold this explanatory material to a minimum.

No. 8. DRAWINGS FOR SAND CASTINGS. This section covers such items as fillet radii, thickness of webs, methods of joining webs and side walls, placing of lugs, bosses, etc for drilling spot facing and the like. Comments and criticism have been received but the report has not been revised due in part to a change in employment of the chairman.

No. 9. FORGING DRAWINGS. The work on this section is just beginning, again due to the failure of the first chairman selected, to function. A new chairman has been appointed.

No. 10. DRAWING FOR METAL STAMPING. This section covers standard practice in stamping, punching, including such items as recommended hole spacing, edge distance, etc. This report is almost complete and requires only final revision.

No. 11. DRAWINGS FOR PLASTICS. This section does for plastics much the same as the previous section does for stampings. The section is practically ready for industry criticism.

No. 12. DRAWING FOR DIE CASTINGS. Chairman resigned and has not been replaced. Some work has been done but the first draft has not been received by the Editing Committee.

No. 13. DRAWINGS FOR SPRINGS, ROUND AND FLAT. This section expands considerably the material shown in the 1946 Standard. It covers the method of drawing and specifying the various types of springs. It is essentially complete except for minor revisions.

No. 14. STRUCTURAL DRAFTING. Chairman resigned. The American Institute of Steel Construction is issuing two books on structural drafting and is not interested in an American Standard. At the Executive Committee meeting it was decided to restrict this report to details of interest to mechanical engineers.

No. 15. SCHEMATIC AND WIRING DIAGRAMS. A new chairman has just been appointed.

No. 16. DRAWINGS FOR TOOLS, DIES, AND GAGES. No action by this committee to date. We are looking for a new chairman.

No. 17. HYDRAULIC DIAGRAMS. This committee got off to a late start but is now making progress.

"Efforts have been made, and I believe successfully, to enlist widespread interest and cooperation on the part of industry in the original preparation of our subcommittee reports," Professor Hoelscher reported. "From 300 to 500 copies of each report have been sent out to industry, the Armed Services, the British Standards Institution, and the Canadian Standards Association for criticism and comment."

Transformers, C57 —

Here is last year's Christmas message from the chairman of Committee C57's subcommittee on Power and Distribution Transformers. It points to many hopes, fears, and ambitions common to all standards-making bodies. H. M. Jalonack, General Electric Company, Pittsfield, Mass., known as "Jolly," is an alternate representative of the American Institute of Electrical Engineers on the sectional committee. The C57.12 to which he refers is the newly completed revision of American Standard C57.12-1949.

TO OUR ASA C57 GANG

A year has almost rolled around
In which we've covered lots of ground,
As into facts we each did delve,
To perfect 57 Twelve;
And when old Santa comes a'knocking,
To fill for us our Xmas stocking,
We'd hate to bring some strong coercion
But we'd sure like a printed version,
ASA numbered — all complete,
So we can give our wives a treat,
And with our chests puffed out a mile,
Claim credit (in a modest style).
For many a knot have we unraveled
As o'er the continent we've traveled,
New York at first; L.A. as well;
Then Mackinac — at Grand Hotel;
And finally for ample reason
Cincinnati closed our season;
What will we find in '54
When we take up our work once more?
One thing we know will ease the tensions —
Settling the bushing's main dimensions,
Plus impulse, creepage, length and strike
At figures most of us now like,
Designs from which we all will gain
And let Bill Dunkle breathe again!
We all know there's still more to do,
We sure can't say that we are through,
Life's rule is "No Rest for the Weary!"
So why not let us all be cheery?
Turn on the taps of Christmas cheer,
Not amps but bourbon, wine or beer,
For in this field, there's no defeat,
Our drainage can be quite complete,
Let all of us give honest thanks
For venting built into our tanks.
(Although you know without my goading,
You'll still need a sound Guide for Loading.)
As "Captain" I've enjoyed it all,
You've done your tasks, both great and small,
And so I wish to each of you,
Because it's time this verse got through,
"May your Holiday be gay as holly,
A very Jolly Xmas!" - - - JOLLY!

Shaft Couplings, Integrally Forged Flange Type, B49—

Sponsor: National Electrical Manufacturers Association

Revision of American Standard B49.1-1947 is now under consideration. The sectional committee, discharged after approval of this standard, is to be reorganized. Preparatory to this reorganization, the American Society of Mechanical Engineers, formerly sponsor of the project, has relinquished sponsorship, and the National Electrical Manufacturers Association has agreed to undertake the responsibility.

National Electrical Code, C1—

Sponsor: National Fire Protection Association

Official interpretations of the National Electrical Code are issued by the Electrical Section of the National Fire Protection Association. The section serves as a sectional committee under the procedures of the American Standards Association.

INTERPRETATION 396, issued October 15, 1953 —Required Size for Grouped Disconnect Means.

Statement: A small two-family building of such size that each apartment can be adequately served by No. 10, 3-conductor feeders, utilizes the provisions of Section 2351-a to have two sets of service equipment. The service conductors comply with Section 2304.

Question: Is it permissible under Section 2357 to provide for each service subdivision, service equipment rated at 50 amperes and then supply 30 ampere plug-in circuit breakers or must 50 ampere circuit breakers be used as service disconnects and smaller circuit breakers or fuses placed in series to protect the No. 10 wires?

Answer: If the 50 ampere service equipment has provision for only two single pole circuit breakers with handle ties or one double pole circuit breaker, then the circuit breakers must have a minimum rating of 50 amperes. If, however, the service equipment has provision for the installation of a number of circuit breakers, not in excess of six, for the disconnecting means, then the individual ratings of the circuit breakers installed may be less than 50 amperes, provided their aggregate installed capacity is 50 amperes or more.

"Cut Your Losses with American Safety Standards" — this was the theme of an exhibit presented by ASA at the American Management Association's insurance conference November 12-13 at the Drake Hotel, Chicago. Some 800 corporate insurance managers from all parts of the United States attended the meeting. Henry G. Lamb, ASA Safety Engineer (above, left), was on hand to answer questions about the standards. Center panel of exhibit, shown above, headlined "Cut Your Compensation Costs by reducing accidents with American Safety Standards." It featured safety standards on grinding wheels, power presses, and ladders. On the opposite side of the revolving panel, the headline advised "Cut Your Losses with American Safety Standards." Safety codes on building exits, prevention of dust explosions, glazing materials for motor vehicles, and fire hose screw threads were featured. At left, the title "Let Your Employees See Danger" called attention to the American Standard Safety Color Code. A graphic illustration of the protection given a workman who wore safety goggles was shown ("Benny Can Still See," right panel).

TRANSFUSION EQUIPMENT

At its first meeting September 24, the Advisory Committee to develop USA viewpoints on the work of Technical Committee 76 of the International Organization for Standardization proposed to set up three subcommittees to study ISO recommendations in detail. One of these would work on the container for transfusion equipment; one on the closure; and the third on infusion and transfusion assemblies. Each of the proposed subcommittees would have representation from the various industries affected in addition to other groups concerned. For example, glass manufacturers would be represented on the container subcommittee; rubber manufacturers on the subcommittee on closures; and plastic manufacturers on the assembly group.

The committee will make the final decision on organization of subcommittees after studying all available material. Purpose of the ISO committee is "to bring about functional interchangeability for transfusion equipment for medical use in different countries and unification of terms and designations for such equipment, and to formulate where possible, specifications for quality and performance of materials."

AUSTRALIA COMMENTS

"Standards lubricate the wheels of international trade. Many countries have been seeking a market in Australia for their products, and during recent years when Australian products of various types have been in short supply, there has been considerable dependence upon imported products. This has led to a flood of inquiries to the library as to the standards of the countries supplying the imported goods as a guide to their quality and characteristics, for example for the standards for British cement, French rails, German steels, Italian bolts, Japanese reinforcing steels. There has also been an exceptional and sustained demand from those countries for copies of various Australian standards."—From *Australian Standards Quarterly*, October 1952—January 1953.

STANDARDS OUTLOOK

by Leo B. Moore

Every continuing human activity possesses a basic good, and knowledge of the basic good helps in appraising the activity. Many times the basic good is easily apparent and casually accepted. But there are activities where we may have to search deeply to discover what the good is and to identify it as such. The searching process is particularly difficult if we are engulfed in the operational details of the activity itself. For a long time now I have tried to put my finger on the basic good of standardization.

By "basic good" I do not mean the immediate value or benefits or contributions of standardization. I mean the deep underlying merit upon which all the value and benefit depend. What is the real and intrinsic worth of standardization? What identifies standardization as a thing apart?

There are two ways to detect "basic good."

The first is to measure what the activity accomplishes in operation, and then analyze these findings by asking why they exist. We are all aware of the work of evaluation that has been done for standardization — the "Dollar Savings" survey of ASA, the articles written about specific cases, and the attempts of company standards men to determine the worth of their work. We know about the dollars saved, production increased, the costs reduced, the quality controlled. But what is their common denominator? I have spent some time contemplating this list of values and benefits to discover the fundamental principle that transcends and includes all these, but have had little success with this first approach.

The second method of finding "basic worth" is to consider what would happen if an activity were abandoned. In what state of affairs would we find ourselves if we ceased our standards operations? What would suffer? Where would we hurt?

What would happen if standardization activity were completely removed?

Prices would be up. Production rates curtailed. Quality elusive. Certain departments, such as production control, would cease to function. Deliveries would be delayed.

Why would these conditions exist? Because no one would know what to do, when to do it, where, how, or by whom. Coordination and control disappear when the activity of standardization ceases. Possibly, then, the "basic good" of standardization is that it facilitates communication and enhances understanding.

ADVICE ON STANDARDS

The following advice is as pertinent in the USA as it is in Australia. When reading it, just change "SAA" and "Australian Standard" to "American Standard."

"Before you begin to make out a difficult, expensive, time-consuming specification for materials or fabrication of material, see if there is not an SAA specification which covers what you want. It's far easier to write '. . . according to Australian Standard No. B.119' than to do all over again the job experts have already put into a form agreed upon by all the industry concerned."—From *Australian Standards Quarterly*, October 1952—January 1953.

Announcing

the long-awaited report on

The Relations of Hearing Loss to Noise Exposure

60 pages, 6 x 9, 18 figures,
8 tables, heavy paper cover

$1.50

Report by Exploratory Subcommittee Z24-X-2 of the American Standards Association Z24 Sectional Committee on Acoustics, Vibration, and Mechanical Shock (Acoustical Society of America, sponsor)

Packed with Data to Help Evaluate Your Noise Problem

Here, the noise problem is analyzed for you. This new report, just issued, represents one of the most comprehensive surveys ever made. It tell you what factors enter into industrial loss of hearing; how much certain types of noise affect hearing; what allowance to make for recovery of hearing after noise exposure; what loss of hearing to expect of different age groups.

With these data you can estimate the probable hearing loss of an individual exposed to noise of specific characteristics for a given period of time.

This report will help you decide how dangerous your plant noise is and whether you should take steps to correct it.

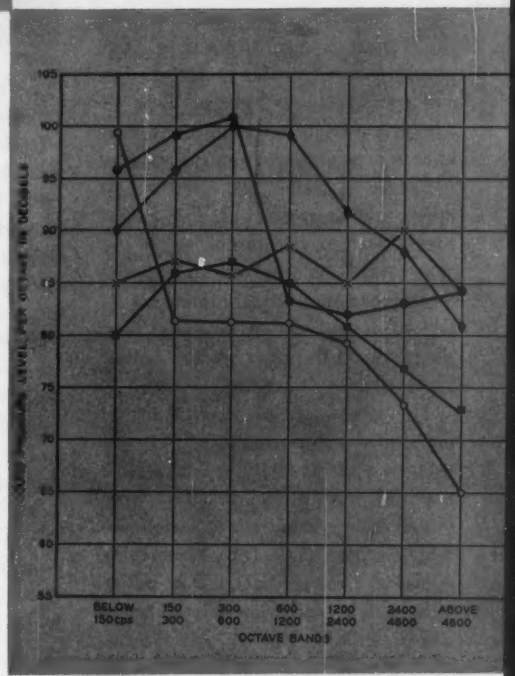


Figure 4, from Relations of Hearing Loss To Noise Exposure, shows examples of noise spectra used in the development of "trend curves."

Subjects discussed: The human problems of industrial noise
Presbycusis (hearing loss as a function of age)
Requirements for field data
Continuous exposure to steady noise (a detailed study)
Intermittent exposure to steady noise --
Airplane noise
Jet-engine noise
Intermittent exposure and non-steady noises —
Riveting
Proof-firing
Drop forge

ORDER YOUR COPY NOW
FOR IMMEDIATE DELIVERY

THE MAGAZINE OF STANDARDS
70 East 45 Street, New York 17

Please send me_____copies of *The Relations of Hearing Loss to Noise Exposure* at $1.50 per copy.

Enclosed is check_____ Send bill_____

Name_____

Address_____

City_____ Zone_____ State_____